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MEDICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. I.—*Cholécystotomy in Dropsy of the Gall-Bladder.* By J. MARION SIMS, M. D., Honorary Fellow of the Obstetrical Societies of London and Dublin; Ex-President of the American Medical Association, etc. (Now in Paris.)

NOTE.—This article is intended to appear simultaneously in this Journal and in the "British Medical Journal," England.

An American lady, aged forty-five, living in Paris, was married at twenty-three, and had one child, now nineteen years old. She had change of life at forty-three, without any constitutional disturbance. A woman of fine intellect and fine appearance, weighing one hundred and sixty pounds, she had enjoyed uninterrupted good health all her life. Her family history was excellent, and her regular habits of living were such that she had not consulted a physician for the most trifling ailment in the last twenty-five years. Besides all this, she was most happily married and enjoyed every comfort and luxury of life that wealth, friends, and a loving husband could bestow. But at last a great sorrow fell upon her, and her husband wisely suggested change of scene, and she spent the months of August and September, 1877, in Switzerland. While there she complained of the cold, and occasionally of pain in the right lumbar region, high up under the false ribs. For the last twelve months she had now and then complained of pain in the right hypochondrium when she stooped over to button her shoes, but not under any other circumstances. She returned home in October, not much im-

proved in health; and, in the latter part of November, she became suddenly jaundiced. In two or three days the jaundice was of a *deep mahogany color*. She complained of languor and debility, but of no pain. Her husband and friends wished her to consult a physician, but she refused, saying she was not at all ill, and she supposed the jaundice would disappear spontaneously, as it was not attended with physical suffering. The jaundiced tint became deeper, and at last she agreed to see a physician, and Dr. Felix Bremond was called on December 5, 1877. He prescribed the usual remedies under such circumstances, but with no marked improvement. On December 30th Dr. Moissonet and Dr. Paquelin saw her with Dr. Bremond, and they discovered some unnatural swelling about the lower border of the liver. They saw her again with Dr. Bremond on January 7, 1878. On January 8th, on going to stool, she had a sudden discharge of clear, uncoägulated blood from the rectum. The discharge of blood was preceded by a griping pain around the umbilicus. She had passed a mass of coägulated blood from the bowels some days before; and for several days since then she had been passing small quantities of blood, which were always preceded by a griping pain about the umbilicus, but she attached no importance to it and said nothing about it. Dr. Bremond, supposing that the blood came from the hæmorrhoidal vessels, at first tried astringent injections, but without effect. He then prescribed perchloride of iron, which appeared to control the bleeding; for on the 10th and 11th it was less, but on the 12th and 13th it was more profuse. The dose of the perchloride was then increased, and the bleeding ceased on the 17th. But it appeared again on the 18th, on the 21st, and occasionally up to January 30th, when it ceased entirely. During all this time she took the perchloride of iron. On December 6th, about a week after the jaundice set in, she began to suffer from intense itching and burning of the skin, which were almost unbearable, and she occasionally had lancinating pains darting like electric shocks through the joints. The itching and burning were so severe that they prevented her from sleeping. They were always worse in the afternoon and evening. Dr. Bremond tried emollients, baths, anodynes, and nervines,

with no permanent effect. The heat of the bed seemed to aggravate the itching, and then, if her arms and legs were uncovered, the exposure to the air made it still worse. It was most painful to witness sufferings that could not be relieved. She would often rest for hours on her knees and elbows to save her body from contact with the bed; and again, she would spend the night walking the floor, scratching, and crying like a child. Ordinarily she had great moral courage, but she lost it all under this uncontrollable itching and scratching. Every part of the body was the seat of itching; the scalp, and even the inside of the eyelids. She was never clear of it, but it was always worse in the afternoon, especially towards five or six o'clock. About the middle of February it became less in the lower extremities, but the upper extremities and the body suffered as usual. In addition to the itching and burning, there was great hyperæsthesia of the skin. Sometimes, when one hand accidentally touched the other, she would suddenly jerk and quiver as if an electric spark had passed between them. The hyperæsthesia was occasionally so aggravated that she could not bear the weight of the bedclothes, or a gentle touch; while again the itching was so intolerable that she was compelled to scratch with great violence. She was never clear of the itching and burning sensation in the skin, which was occasionally attended with what is known as "goose-flesh" roughness, with a sense of internal chilliness, but she never had distinct rigors. She passed whole nights without sleeping, simply because of the itching and scratching. No remedy, internal or external, produced any permanent benefit.

On January 15, 1878, Dr. Noel Gueneau de Mussy saw her in consultation with Dr. Bremond. The swelling in the right hypochondrium had increased, and was now easily recognized as a distinct tumor. For some time she had complained of constant aching pain and weight in the tumor, extending back to the right lumbar region, with occasional pain under the right shoulder-blade. The pain in the tumor was sometimes lancinating, and, when she turned in bed, she was always conscious of the movement and pressure of the tumor. From this time Dr. Bremond could see that the tumor grew from day to day. She

had had nausea and vomiting from time to time, but now she vomited almost daily. From the inception of the jaundice her stools had always been clay-colored, except when they were bloody, and their odor was very offensive.

On February 7th, Dr. Labbé was called in consultation with Dr. Bremond and Dr. Gueneau de Mussy; but, in spite of their best efforts, there was no amelioration of suffering. The previous loss of blood and loss of sleep from itching, the continued enlargement of the tumor and the constant pain, the inability to take food in sufficient quantities, and the daily vomiting, all conspired to produce a physical and moral depression that created great anxiety. It is useless to give a daily report of the progress of the case. All days were bad and all more or less alike. The same itching and burning, the same sleepless nights, the same offensive clay-colored stools, the same pain in the tumor, in the right lumbar region, and under the right shoulder-blade, with occasional vomiting, were suffered every day. Our patient, from being a stout, handsome woman, became thin and emaciated; and was jaundiced, from the second day of her attack, of a deep-brown mahogany color. The urine was always scanty, intensely high colored, and gave a bile tinge to the sides of the vessel when shaken. Besides Dr. Moissonet, Dr. Gueneau de Mussy, and Dr. Labbé, she was seen by Dr. Péan, Dr. Bouchout, Dr. Paquelin, and Dr. Dusseris.

I saw the patient with Dr. Bremond on March 30th, and obtained the history already given. The tumor, which was continuous with the liver, filled up the right hypochondrium, reaching far below the umbilicus; and Dr. Bremond showed me two diagrams, one made on March 6th and the other on the 16th, which plainly demonstrated the size of the tumor and the rapidity of its growth.

On March 6th it extended eleven centimetres (four inches and a quarter) below the umbilicus, and it was eleven centimetres in its transverse diameter.

On March 16th it extended fourteen centimetres (five inches and a half) below the umbilicus, and it had the same transverse diameter, measuring from the linea alba toward the false ribs. To the sight, the right hypochondrium was much larger than

the left. The tumor was oblong, rounded, and slightly movable laterally. To the touch, it was sensitive and hard, or tense. The tension was so great as to mask fluctuation; still, I detected fluctuation, and gave it as my opinion that it was a cyst connected with the liver, but whether hydatid, or dropsy of the gall-bladder, I could not say. But I advised aspiration as a diagnostic means to guide subsequent treatment. Dr. Bremond at once agreed to this course. Accordingly, on the following day, assisted by Dr. Bremond and Dr. Pratt, the tumor was aspirated, and thirty-two ounces of a dark-brown fluid were evacuated. From the color of the fluid I supposed it was bile. But an analysis showed that there was no bile in it and no hydatid hooks. The immediate effect of emptying the tumor was greatly encouraging. She was relieved of all pain in the region of the tumor and liver. She slept all night and a good deal during the following day. There was no vomiting, and she had no itching for two days. She was able to take fluid nourishment, and the pulse and temperature were normal. But the urine was scanty (eighteen to twenty-four ounces a day) and very high colored. These favorable symptoms did not last long. Two days after the aspiration she complained of itching again in the upper extremities, of pain in the right lumbar region and under the right shoulder-blade, and of nausea. Her stools had the same fearful odor, and were always whitish or clay-colored. She gradually became weaker, sleeping but little, worn out with itching, and prostrated for want of nourishment. On April 8th, nine days after the puncture, she had a slight bleeding from the nose.

April 9th.—Very nervous, and crying from the pain of itching, and felt sore all over from scratching; nauseated; exceedingly feeble; fell into a sort of stupor, which was afterwards ascertained to be syncope. She had several of these attacks of syncope, with nausea and exhaustion, and Dr. Bremond was obliged to remain with her nearly all night. With the syncope, she had pain in the stomach, also about the umbilicus, and a sensation of coldness; and towards morning she had hiccough, cold hands and feet, and vomiting, with complete prostration, the pulse being frequent and feeble. This state of prostration

passed off in about twenty-four hours, when the skin became warm and the pulse normal. She passed no urine during all this time. Having been called from the city, I did not see our patient after the aspiration till April 13th, just a fortnight. I found her much weaker, and suffering as usual with itching, nausea, vomiting, and having stools of the same color and odor as before; and she complained very much of the tumor, which was now nearly as large as before the puncture. It was heavy, and dragged as she lay or turned in bed. It was more sensitive on pressure than ever before; indeed, there was such a degree of sensitiveness that she could hardly bear to be touched. There was considerable tympanites, and a deep breath greatly aggravated the pain in the tumor. She also complained of the same old pain extending from the shoulder-blade down the right lumbar region. The pain in the tumor was so much worse—there was so much tenderness on pressure—such evidence of inflammatory action, with such a degree of prostration—that Dr. Bremond and myself, looking upon the case now as hopeless, agreed to cut down on the tumor, freely open it, empty its contents, and, if it proved to be the gall-bladder, to attach its incised border to the edges of the abdominal incision, and thus to make a fistulous opening that would insure against its refilling. We were encouraged to make a permanent fistulous opening, because, first, we saw such improvement in all her symptoms follow the temporary removal of the fluid by aspiration; second, it would be in imitation of the efforts of Nature in all similar cases where recovery has taken place; and third, death was speedily inevitable if we did nothing.

Operation—April 18*th*, 10 *A. M.*—There was great tenderness and pain in the region of the tumor, aggravated by pressure. For the last three or four days there was marked tympanites. The pulse had risen from 75 up to 110, and the temperature to 100°. Her sufferings were altogether so much worse than they had ever been before that she implored us to lose no time in giving her the relief she expected from the operation. Dr. Hayden gave ether, and Dr. Bremond and Dr. Pratt assisted me. The operation was performed under proper antiseptic precautions, with carbolic spray, and carbolic lotion for hands,

sponges, and instruments. It took an unusually long time (twenty-four minutes) to get the patient under the influence of the ether. An incision, three inches long, parallel with the linea alba, was made over the most prominent part of the tumor, about three inches to the right of the umbilicus. It was begun an inch above the level of the umbilicus, and extended two inches below it. The peritoneal membrane was soon reached, but not opened till all bleeding from divided vessels was controlled. As there was such a hæmorrhagic tendency, this required six artery forceps on each side of the incision. When the peritoneum was opened, several ounces of pinkish serum (perhaps six or eight) were discharged. I am somewhat in doubt whether the pinkish color of the serum was due to the rupture of recent adhesions between the cyst and the parietal peritoneum, or to osmosis from the peritoneum. But I think it was from the latter cause; for I did not, by sense of touch, discover the adhesions, if any existed. The largest size Dieulafoy trocar was thrust into the tumor, and twenty-four ounces of a dark-brown fluid withdrawn, which I supposed to be bile. As soon as the cyst was emptied, it was hooked up with a tenaculum and pulled to the outer edge of the incision, where it was seized with forceps and drawn out for about two inches. It was there held while the finger was passed into the peritoneal cavity, along its under and upper surfaces, when it was ascertained, by its attachments to the liver, to be the gall-bladder. Dr. Bremond, Dr. Pratt, and myself each thoroughly explored the sac by touch, and satisfied ourselves that it was the gall-bladder. This multiple manual investigation would have been unjustifiable and hazardous without antisepticism. The gall-bladder was then incised with scissors to the extent of about two inches, and was thoroughly cleaned out with sponge probangs passed to the bottom of the sac, which, on measurement, was found to be eight inches deep. At first there were removed about two ounces of a dark-brown fluid, much thicker (containing more mucus) than that already drawn off; and then there were drawn out with the probang a half dozen or more gall-stones. One probang after another was then passed in and swept around till sixty gall-stones were removed.

Having emptied the gall-bladder, it now only remained to secure its open border to the upper angle of the abdominal incision to insure a fistulous outlet. As it was already drawn out through the incision to a considerable extent, I concluded to amputate the projecting portion, which was a mistake. Its walls were greatly thickened, and bled when cut so as to require the use of several artery forceps. The puckered mouth of the amputated cyst was then crowded into the upper angle of the abdominal incision, and there secured with eight fine carbolized silk sutures, taking good care to pass each suture through the whole thickness of the abdominal walls, including the peritoneum. After this process was finished, we waited several minutes with small carbolized sponges (on probangs) resting just within the cavity of the peritoneum, to be sure that there was no bleeding from the needle punctures. Satisfied on this point, the lower portion of the abdominal incision was closed with fine carbolized silk sutures, including the peritoneum. The whole wound was then covered with some cotton-wool saturated with carbolic oil, over which was placed a large compress of fine cotton-wool secured with adhesive straps and a flannel binder. When the wound was closed there still remained a considerable quantity of pinkish serum in the peritoneal cavity, such as I formerly thought justified the use of a drainage-tube. But the experience of Bantock and Thornton at the Samaritan Hospital proves very conclusively that drainage is not always necessary under Listerism, because it prevents putrefaction, and the reddish serum is absorbed without producing septic symptoms.

The operation lasted one hour and sixteen minutes, exclusive of the time consumed in getting the patient etherized. The most tedious part of it was in securing the cyst in the incision and closing up the wound. This took up all of thirty-five minutes. The patient recovered from the anæsthetic half an hour after the operation, and vomited once from its effects, and then lay quiet and comfortable, sleeping a good deal during the afternoon; and she slept all night.

April 19th—First day after the Operation.—The pulse and temperature were normal; there was no pain and no fever. Dr. Hayden remained all night, but was not called up. She took

nourishment at stated intervals in sufficient quantities. She was free from pain; her pulse and temperature were good. She slept; had no nausea or vomiting. She had passed twenty-five ounces of dark-brown urine in the twenty-four hours, which gave the tint of bile to the sides of the vessel when shaken; and the stools even became natural in appearance and odor, looking like they might have been passed by a child. Taken altogether, her condition was good.

April 20th—Second day.—There was a slight discharge of brownish fluid from the wound, or rather from the gall-bladder.

April 21st—Third day.—She had passed a good night, sleeping and resting well. Her mind was clear, her memory good, and she was very bright and hopeful. She reminded her husband this morning that this was his birthday. There was no itching. 9 A. M.—A little brownish fluid was passing from the wound. 5 P. M.—The wound was dressed for the first time, and under carbolic spray. It had healed perfectly. The edges of the sac adhering to the upper angle of the incision looked grayish, as if the circulation had been obstructed by constriction. In the last twenty-four hours she had passed but fourteen ounces of high-colored urine.

April 22d—Fourth day.—Her condition was satisfactory; she had slept well. She had passed nine ounces of urine during the night of the same deep-brown color. She complained of dryness of the mouth.

April 23d—Fifth day.—She had had a good night's sleep. Her pulse and skin were natural. She felt stronger. She had a natural stool. 5 P. M.—Pulse 80; temperature 100. She had passed seventeen ounces of urine in the last twelve hours. 9 P. M.—The tongue was red and dry, and blood was oozing from the gums and tongue. Six ounces of urine had been passed.

April 24th—Sixth day, 8:30 *A. M.*—Nurse said she had a bad night. 8:45 A. M.—The discharge from the wound was mixed with blood. 9 A. M.—The wound was dressed. The abdominal incision below the fistula of the gall-bladder was perfectly healed. There was no pus about the sutures, which were allowed to remain. There was a little oozing of blood from the edges of the gall-bladder. Some iron cotton-wool was

placed over this point, and pressed down with a sponge held in position with strips of adhesive plaster. The oozing of blood from the gums increased.

April 25—*Seventh day*, 3 *P. M.*—Again oozing of blood and dark-brown fluid from the wound, and it was again dressed with iron cotton-wool and a sponge compress. Ergot was ordered to be injected hypodermically every four or five hours, with the hope of controlling the exudation of blood from the mucous membrane. Up to this time I expected our patient to recover; but when I saw the blood exuding continually from the mouth, I told the husband it was a serious symptom, and that in all probability the same thing would take place in the stomach, and that death would occur from black vomit, just as it does from yellow fever. The ergot was continued for twenty-four hours, and then we resorted to the hypodermic injection of dialyzed iron, but without any amelioration of the bloody discharge from the gums. 5:30 P. M.—Pulse 98; temperature 100.2.

April 26—*Eighth day*, 7:30 *A. M.*—She vomited six ounces of a dark, coffee-ground fluid, having all the appearance of black vomit of yellow fever. 9:15 A. M.—She vomited again one ounce and a half of black vomit, in which blood was plainly visible. Pulse 100, feeble; respiration 26; temperature 99.6. From this time she gradually sank, and died at 4:25 P. M. on April 26th, eight days and six hours after the operation.

Saturday, April 27th, 6 *P. M.*—Embalmment and partial necropsy by M. Ganal, twenty-six hours after death. Besides M. Ganal and his assistants, there were present the Commissaire of Police, Dr. Bremond, Dr. Hayden, and myself. The body was much emaciated. Rigor mortis well marked. The skin was everywhere of a deep orange mahogany tint. The abdomen was tympanitic, evidently post-mortem. On the back there were several bullæ, varying in size from one to two or three inches in diameter, which, when opened, discharged bloody serum. A fluid similar to black vomit, showing granules of blood, had been running from the nose, and stained the right side of the face.

On removing the dressing from the wound, a dark-brown fluid was discharged through the fistulous opening in the gall-blad-

der. On close examination, the abdominal incision was found to be perfectly united, and there was no pus around the sutures. M. Ganal made an incision from the ensiform cartilage to the pubes, and cut down to the peritoneum. Thinking he had cut through the peritoneum, he began to separate it from the abdominal parietes, saying: "Here is peritonitis with adhesions everywhere." I told him to open the peritoneum, which he did, and found that there was not the slightest evidence of peritonitis. The intestines all had a bloodless, pearly appearance, almost diaphanous. M. Ganal then made an incision from the ensiform cartilage at right angles with the longitudinal one, in a direct line across the right hypochondrium, and another incision from about two inches above the pubes, across the right hypogastrium to the spinous process of the ilium. The three-sided rectangular flap of abdominal wall thus made was raised up and turned back over the edges of the false ribs on the right side, showing the gall-bladder firmly adherent to the walls of the abdomen, where it had been attached by the sutures at the time of operation. M. Ganal then passed a director into the gall-bladder through the external fistulous opening, showing the continuity of the two. After satisfying himself that the operation had been successful in this respect, he cut the gall-bladder loose from the parietes of the abdomen, and then introduced his hand into it and removed sixteen gall-stones from the size of a pea to that of a pigeon's egg. They were all sacculated, and this was the reason that they were not removed at the time of the operation. He then removed the gall-bladder entire, which was very large, and its walls were much thickened. After doing this, he was able to pass a probe from the gall-bladder through the ductus communis choledochus into the duodenum. The inner surface of gall-bladder was very dark-colored, almost black; but its structure was so firm that it could not be scraped off with a knife. On cutting into the substance of the liver, large quantities of serosity ran out, and its bile-ducts were much enlarged, as plainly seen by the naked eye. The stomach contained a large quantity of dark, flocculent, coffee-grounds fluid, which in yellow fever is called black vomit, and so did the small intestines. The mucous membrane of the

stomach and small intestines was pearly white, with no patches of inflammation or ulceration to account for the exudation of the black, bloody fluid. The sigmoid flexure, at its junction with the rectum, contained fæces of natural color and consistence.

In the Douglas cul-de-sac there was about an ounce of uncoägulated blood, which appeared to have come from a little erythematous patch on the peritoneum, near the lower end of the sigmoid flexure. M. Ganal thought the fluid blood had passed from this point by osmosis. On the inner surface of the bowel, just opposite this elevated point in the peritoneal coat, the mucous membrane, for half an inch in diameter, was thickened, elevated, and had a papillated appearance, and it was supposed that this point might have been the seat of the prolonged bleeding that occurred between the 8th and 30th of January.

The contents of the gall-bladder, a piece of the gall-bladder, and the vomited matter, were sent to M. Ranvier, Professor of Histology in the College of France, for examination, and the following is the report:

"Calculous cholécystitis and dropsy of the gall-bladder. Microscopical examination of the gall-bladder, its contents, and of the matter vomited.

"A. Microscopical examination shows that this membrane is composed of three layers, easily distinguished even when feebly magnified, although they are not distinctly separated from each other.

"1. An external conjunctival layer resembling the subperitoneal cellular tissue.

"2. A middle fibrous layer intermixed with fasciculi of smooth muscular fibres crossing each other in every direction. This layer is also supplied with vessels, the arteries and veins being quite large.

"3. An internal layer, whose deepest parts continue imperceptibly with the preceding. It consists of a granulated tissue (Virchow), viz., of embryo elements, in the middle of which vessels may be seen very much congested and furnished with walls, which are still themselves in an embryo condition. In many points the walls of these vessels are ruptured, from which

small hæmorrhages have resulted. There exists no trace of epithelial covering at the surface of the layer, nor is there to be seen in its thickness the presence of a single glandular tube.

"B. *Liquid contained in the Gall-bladder.*—The liquid is transparent and slightly tinted with red. After a minute examination, no trace of echinococci could be found, nor any striated membrane. Therefore, it was not from a hydatid cyst. A large number of red globules were seen, which had preserved their natural form and color. We will see later the importance of this fact from a pathological point of view.

"C. *Gall-stones.*—These were composed, as usual, chiefly of cholesterine.

"D. *Vomited Matter.*—The contents of both tubes, although vomited at different intervals, presented under the microscope the same characters. They consisted of a liquid, somewhat viscous and of a green color, caused by the bile. On examining the deposit, which was abundant and also of a deep-green color, the following elements were observed:

"1. Epithelial cells of different forms, the greater number being in the form of prisms of a green-olive color, caused by biliary pigment. The coloration was uniform.

"2. Isolated and conglomerated granulations of the coloring matter of the bile (biliverdin) formed blocks of considerable size.

"3. Lymphatic cells infiltrated with little drops of mucus.

"4. Vibriones and bacteria of different species. Bacterium punctum, termo, and catenula.

"5. A number of red globules very much altered, and well known by their pale circle and double outline.

"On adding acetic acid to the liquid, a deposit was formed which had the characteristics of mucin. No sarcinæ ventriculi were found.

"*Conclusions.*—1. The microscopical examination, and also the post-mortem examination, allows us to conclude that the walls of the cyst-pocket belong to the gall-bladder. The alteration which it had undergone does not, it is true, permit me to recognize either its villosities or its epithelial lining; but the structure of its middle and external layers is sufficiently char-

acteristic. As to the glands, we know that their existence outside of the portion near the neck is very uncertain (Kölliker). The alteration which has taken place in the gall-bladder manifests itself on the mucous lining, and is purely of an inflammatory character. It is transformed into a granular tissue similar to that of fungus-granulations, composed of embryo elements permeated with vessels of a new formation, whose walls are also in an embryo condition. These lesions are identical with those we find in cases of obliteration of the canal of the gall-bladder (calculous cholécystitis).

"2. The liquid contained in the dilated gall-bladder offers an example, not of colorless bile, but of dropsy of the gall-bladder, from which we are able to draw two conclusions:

"1. Sometimes the gall-bladder contains a colorless liquid, still having the bitter characteristic of the bile, and in which, by the reäction of Pettenkofer, we are able to recognize the existence of biliary acids.

"2. Sometimes, on the contrary, the liquid contained in the gall-bladder, also colorless and viscous, is deprived of the bitter principle of the bile, and a chemical reäction shows not only the absence of the coloring matter, but also of biliary salts. Cases of this kind are not rare. We find them mentioned by Cruveilhier ('Atlas d'Anatomie Pathologique'), who gave them the name of dropsy of the gall-bladder (Frerichs, 'Traité des Maladies du Foie'; Moxon, 'Pathological Society's Transactions,' 1870, vol. xxiv). They occur in many cases of occlusion of the bile-ducts, whatever may be the cause.

"In the case related by Frerichs, the liquid which dilated the gall-bladder and biliary canals was transparent, slightly mucous, and a little alkaline. The reäction of Pettenkofer could not be obtained. Under the microscope, a large number of mucous corpuscles were found, and, by the addition of acetic acid, a precipitate was found characteristic of mucin.

"It is generally admitted, in order to explain the substitution of this liquid (so different from the bile) for the bile, that the bile for a long time retained and submitted to a considerable and increasing pressure, is absorbed, and a sero-mucous liquid, secreted by the mucous glands and the epithelial covering, takes

its place. This is also the opinion of Professor Charcot (' Lecons sur les Maladies du Foie,' 1876).

"If we now ask ourselves what is the nature of the liquid under consideration, and which so distended the gall-bladder, notwithstanding the absence of a chemical examination, we will find an answer to our question by the preservation of the red globules in the liquid. Every one knows, since the researches of Kühne (' Zeitschrift für Wissenschaftlichen Zoölogie,' vol. ix, p. 261,) that the bile, and particularly the biliary salts, destroy the red globules, which first become pale and then disappear suddenly without leaving a trace. On this fact, which is very easy to verify, Kühne established a theory of malignant jaundice (ictère grave), which resulted from the destruction of a large number of red globules by the biliary acids which were absorbed by the mucus of the intestine. Therefore, the presence of red globules intact in this case is a certain proof that, in the liquid which contained them, there was not an appreciable quantity of biliary salts, and consequently was not itself colorless bile.

"(Signed,) E. CHAMBARD, Interne des Hôpitaux,
"Répétiteur au Collége de France."

Like many others who have not given special study to the diseases of the liver, I supposed that dropsy of the gall-bladder meant a gall-bladder distended with bile; and when the chemist made the analysis, showing that there were no hydatid hooks and no bile in the fluid, I was amazed. So, when the operation of cholécystotomy was performed, I took care to have the highest authority on the subject, and I have now great satisfaction in submitting Dr. Chambard's report, which not only shows that the distended inflamed gall-bladder contained no bile, but gives the reasons why it did not.

Although this case terminated fatally, I look upon it as a triumph for Listerism; for the post-mortem examination proved that there was not the least trace of peritonitis or other untoward complication to be found as the direct result of the operation.

The benefit of the operation was shown in the immediate relief of pain, itching, nausea, vomiting, and in the production

of stools natural in color and odor. Death occurred, as it usually does in all such cases depending upon total occlusion of the bile-ducts, from transudation of blood from the mucous surfaces; i. e., from passive internal hæmorrhage, the result of the poisonous effects of the biliary salts on the blood.

I believe this operation unique. Is it justifiable? I think it is, because it is in imitation of the process adopted by Nature in all cases in which recovery takes place. Death is absolutely certain in every case where the gall-ducts are mechanically obstructed, unless an outlet is obtained either into the alimentary canal or by a fistulous opening externally through the abdominal walls. All authors have advised against opening the gall-bladder until Nature had prepared the way by forming adhesions between it and the abdominal walls, or till this had been done artificially by caustic potash. But this case proves that it is not necessary to wait for the tedious efforts of Nature, on the one hand, or resort to the clumsy process of caustic, on the other. Dieulafoys's aspirator renders the diagnosis certain, and antisepticism renders the operation of cutting down to the dropsical gall-bladder and establishing a fistulous opening quite as safe as to leave it to the slower process of Nature. The propriety of the operation being established, we can hereafter resort to it at an earlier period, before the changes are effected in the blood by the bile acids, which lead to its extravasation from the mucous surfaces. The blood of our patient was already so changed, so impoverished by the toxic action of the bile, that the operation was nugatory in staying the fatal result. Fortunately for progress, the clinical history of the case and the post-mortem examination establish beyond any question the safety of the operation *per se*.

It is too much the fashion now-a-days to coin new names for old operations. But, as this is a new operation, we must find a new name for it. And I think cholécystotomy will answer. It is not necessary to encumber the name with the prefix "laparo," which is now used to designate operations through the walls of the abdomen, as there is no other route by which we could reach the gall-bladder. Were I called upon to operate again under similar circumstances, I would not procrastinate it a day after

the diagnosis was fully established. For it is certain that the longer it is put off the more the blood becomes poisoned by the bile, and the more the chances of recovery are diminished.

I would perform the operation precisely as I did, except in this particular. I would not remove any portion of the gall-bladder; I would draw the gall-bladder, after emptying it, to the surface, open it longitudinally with scissors for an inch or two, seize each side of the incised part with spring-forceps, hold it firmly, then clean it out with sponge probangs, as I did in this case, or throw in a stream of carbolized warm water through a gum-elastic catheter introduced to the deepest part of the cyst. By this means I would expect to remove the gall-stones by the returning force of the injection with greater ease and with less manipulation than by the sponge probangs. It is a mistake to pull the gall-bladder through the abdominal incision and amputate any portion of it, because it will be found much thickened, and the removal of a segment of it leaves a large opening to be crowded up into the superior angle of the incision, there to be secured by sutures. It will answer a better purpose simply to incise the gall-bladder, as before said, than to remove any portion of it.

Since the time of Borrichius, in 1676, cases of dropsy of the gall-bladder, complicated with gall-stones, resulting in abscess and a fistulous opening externally, have been frequently observed. In many cases recovery has taken place even in very old people. In some death followed often as the result of black vomit; in others the discharge of bile through the fistula continued for a long time without detriment to the general health. In many the fistulæ were eventually closed up, and in almost all of them gall-stones in greater or less numbers were discharged; some of them small and some of great size. As death so often occurs from impacted gall-stones, the question of surgical interference has more than once been raised. And recently Dr. Handfield Jones has revived the question. In speaking of the passage of gall-stones through the ductus communis choledochus, he says ("Medical Times and Gazette," March 9, 1878, p. 247): "I made the proposal, when danger became imminent, to one of my surgical colleagues to open the abdomen, and

endeavor by manipulation to force the calculus out of the duct into the bowel. He declined the responsibility of such operative interference, and so the idea was given up. After death, before the necropsy was commenced, I tried to ascertain how far it would have been practicable to execute the proposed manœuvre. I found the calculus in the anticipated situation, but could not positively determine that it was such or an enlarged gland, nor could I press it forward. However, if I should meet with another case, I should be much disposed to advocate the operation, as it might save life."

Mr. Spencer Wells and other ovariotomists constantly make exploratory incisions into the abdominal cavity to determine the nature of doubtful tumors, and hardly give it a serious thought, as the operation is done with great impunity, and I am sure that, under antiseptic precautions, Dr. Handfield Jones' idea of opening the abdomen and exploring for gall-stones, can be and will be carried out with the same impunity and with the faith that, if it fail to save life, it will certainly not shorten it.

Given a case of persistent jaundice, with clay-colored stools, nausea, and itching, we may almost certainly infer that there is mechanical obstruction of the ducts of the gall-bladder. Why, then, should we wait for months for the gall-bladder to become dropsical and to swell up into an enormous tumor, filling the right hypochondrium, and extending even to the iliac region? Why not open the abdomen, explore the condition of the liver, and, if we find gall-stones, why not open the gall-bladder, remove the gall-stones, and sew up the incision in the gall-bladder with the same security, the same confidence, that we would stitch up a wound of the intestine? There is no reason why it should not be done, and it will be done; so it will eventually be seen that the operation of cholécystotomy, joined with Dr. Handfield Jones' proposition, will open up a new field in the great domain of abdominal surgery.

I do not know that itchiness of the skin is a common symptom of ordinary accidental jaundice. When I practiced medicine in Alabama forty years ago, I frequently saw cases of jaundice; but I do not remember that they were attended with inveterate itching. I had jaundice myself in 1847, as a sequence

of yellow fever; but I did not suffer from the peculiar itchiness that belongs to jaundice from mechanical obstruction of the gall-ducts.

Murchison says that itchiness is rarely observed except in cases where the jaundice is due to the obstruction of the bile-duct. From recent investigations into the literature of the subject, I am led to think that inveterate itchiness, jaundice, and absence of bile from the stools conjoined will be found to be pathognomonic of mechanical obstruction of the bile-ducts. If this could be established as a law, then it would greatly aid us in determining such cases as might be promptly brought under surgical treatment. There is a difference of opinion amongst authors as to the cause of itching. It has been variously conjectured to depend in some way on the bile-pigment or bile-acids deposited in the rete mucosum. If this be the case, then we ought to find it in ordinary jaundice of a temporary character. In the case I have related, the itchiness was an early symptom, and it became intense, and remained so up to the time the gall-bladder was aspirated on March 30th. The sudden removal of the fluid from the gall-bladder by aspiration took off the pressure, and the itching was relieved for two days; but, when the gall-bladder began to refill, the itching returned, and soon became a troublesome symptom. By the aspiration on March 30th, there were removed thirty-two ounces of fluid; by the operation April 18th, there were removed twenty-four ounces of fluid; by this operation all the fluid and all the free gall-stones (sixty) were removed, and a fistulous opening was established through which the dropsical fluid of the gall-bladder could and did escape in certain quantities. Now, after this operation, the itching never returned, and yet the skin was of the same deep-brown mahogany color that it was before the operation. If this coloration be due to bile-pigment, as we all believe, and if the itching be due to the direct action of the bile on the sensory nerves, why was the itching so modified by aspiration, and so perfectly relieved by the operation of establishing a fistulous opening for the constant discharge of the contents of the gall-bladder? This leads to the inference that the itching is not due to the irritating effects of the bile locally, but is a reflex symptom;

that it depends more upon the pressure of distension; for we see, in this instance, that the temporary relief of the pressure and distension was followed by temporary relief of the itching; and that the permanent relief of the pressure and distension was followed by permanent relief of the itching. As death occurs often in this affection from passive hæmorrhages, so clearly the result of cholétoxæmia, it would be fortunate if we could diagnose it in its early stages, so as to resort to a radical treatment before the blood became so poisoned as to preclude the hope of cure.

The history of this case shows that the tumor was discovered on December 30th; that is, about one month after the jaundice set in. It then presented all the characteristics necessary for a complete diagnosis. But all our authors, without a single exception, so far as I know, positively forbid any surgical interference until the tumor is found knocking at the abdominal parietes for the exit of its contents. Guided by the highest authority amongst us, we were not justified in performing any operation, except as a dernier resort; and it was then done too late, as our patient died precisely as she would if no operation had been done. But, guided by the experience gained by this case, we may hereafter resort to operative procedures at an earlier day and with greater prospects of success. No case like this ever gets well, unless Nature or art, or both united, establishes a timely fistulous opening to relieve the gall-bladder of its contents, and thereby restore the channel for the bile. Now, what I propose is this: Whenever we have persistent jaundice, with clay-colored stools, nausea, and intense itching of the skin, we may take it for granted that there is mechanical obstruction of the gall-ducts, and it is our duty to open the abdomen and search for the gall-bladder as soon as we can detect any swelling in the region of the liver. If we find a dropsy of the gall-bladder, we should deal with it as I have already indicated. If we have been mistaken in our diagnosis, then we have made a simple exploratory incision, which, under antiseptic precautions, is devoid of danger. I would extend the principle of exploratory incisions to other affections of the liver. We know that abscess of the liver is a very dangerous and often fatal disease.

It sometimes bursts into the peritoneal cavity, causing rapid death from shock and peritonitis; again, it makes its way into some portion of the alimentary canal, or comes to the surface through the abdominal walls, or passes upwards through the lungs, simulating consumption; while, again, it destroys its victim by pyæmia before it can find an outlet by the slow process of Nature. Only three years ago one of the great statesmen of my own country died of abscess of the liver that made its way through the lung. And, about twenty-five years ago, one of the most eminent of American surgeons, hardly second to our illustrious Mott, died of pyæmic abscess of the liver, which was discovered only after death. With antisepticism and aspiration, it would now be possible to give relief to such cases when correctly diagnosed.

In cases of suspected abscess of the liver, I propose to make an exploratory incision, to introduce the fore and middle fingers, the hand, if necessary, to examine the liver minutely by the touch above, below, and in all directions; and, if we find fluctuation anywhere, to pass in a Dieulafoy trocar and evacuate the abscess. This I should expect to do with the same ease and the same impunity that belong to the exploratory incisions that we constantly make in doubtful ovarian tumors.

The great lesson that this case teaches is this: In dropsy of the gall-bladder, in hydatid tumors of the liver, in suspected abscess of the liver, and in gall-stones, we should not wait till the patient's strength is exhausted, or till the blood becomes bile-poisoned, producing hæmorrhages, but we should make an early exploratory incision, ascertain the true nature of the disease, and then carry out the surgical treatment that the necessities of the case may demand. If this should be done under antiseptic precautions, I am sure that much suffering will be relieved, and many valuable lives saved that would otherwise be lost. Without Listerism, the operations I here propose would be hazardous; with it, I believe them not only feasible, but perfectly justifiable.

ART. II.—*New Instruments for Amputating the Cervix.* By W. H. WATHEN, M. D., Clinical Lecturer on Diseases of Women and Children, Louisville Medical College; Senior Vice-President of the Kentucky State Medical Association, etc.

The following review notice appeared in the June number of the "St. Louis Clinical Record":

"The conditions in which the operation is indicated and dangers attending it are well described. Attention is directed especially to the description of a scissors invented by the author for excising the cervix, also to a double tenaculum forceps contrived by him for holding the cervix steady while it is removed. The 'cervix scissors' described are 'made after the fashion of ordinary scissors, bent at right angles on the flat, with the blades slightly curved on the edge and finely and sharply serrated.'

"We would direct Dr. Wathen's attention to the instrument described and figured by our friend, Dr. C. Frederick Clark, of Brooklyn, N. Y. (*vide* 'New York Medical Record,' May 29, 1875). He will see that the instrument has been in use several years. Dr. Clark also gives the credit to the author of the principle involved in the construction of his instrument, a very admirable feature in a scientific communication."

I do not subscribe to the "New York Medical Record," and I had never seen a notice of Dr. Clark's scissors. When I read the above review, I wrote to the editors of the "Medical Record" and to Dr. Clark for a copy of his paper. He promptly furnished me with the journal, and I have since procured of Messrs. Tiemann & Co., of New York, the original wood-cut of his scissors. (I give here a cut of his scissors, and a cut of mine on the next page.) Dr. Clark's paper is as follows:

"*A New Instrument for Amputation of the Cervix Uteri.* By C. FREDERICK CLARK, M. D., of Brooklyn.—For the purpose of amputating the cervix uteri, and at the same time

divesting the operation of its great danger, hæmorrhage, I had constructed for my use, by the Messrs. Tiemann, of New York, a pair of tooth-edged cutting scissors on the principle proposed by Dr. Richardson, of London, but so modified as to be available in uterine surgery.

"The accompanying cut will sufficiently explain the instrument. The handle is curved on the flat so as to leave abundant space for working the blades while the speculum and tenaculum are in position, and the crossing of the blades in the handle renders the instrument easy of management, even when some forms of the bivalve speculum are used.

"The cutting should be done slowly and firmly, thereby allowing each surface of the angular teeth to press on the tissues. If necessary, torsion may be used before fully closing the blades.

"On the 9th of March I used the instrument to amputate the cervix, the case being one of conoid cervix, accompanied with dysmenorrhœa and sterility. The operation was performed without bilateral splitting of the cervix, and the stump was left to heal by granulation. *No hæmorrhage* ensued, and the operation was in every way successful.

"A tampon of cotton, moistened with a solution of carbolic acid and glycerine, was then applied to the wound, and, being removed the following day, showed a perfectly clean surface in process of healing.

"Injections of a solution of carbolic acid were continued for ten days, at the expiration of which time my patient had entirely recovered.

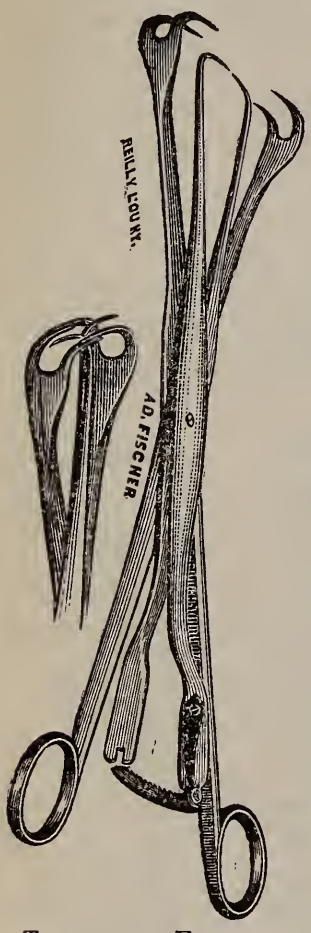
"As I believe this is the first case in which amputation of the cervix has been performed by this method, in view of its efficiency in my own hands, I am pleased to subject it to the judgment of the Profession.

"306 Union Street."

Cervix Scissors.

That the reader may judge how far I encroached upon Dr.

Clark's invention, and at the same time observe the dissimilarity in form and action of the two instruments, I beg attention to an extract from my original paper. After a description of the methods of performing amputation of the cervix and the various instruments used for that purpose, the following appears:



Tenaculum Forceps.

"With the view of combining the advantages of these several instruments in one, I have had made what I style a cervix scissors, with which I have operated once. It will be observed that it is made after the fashion of an ordinary scissors, bent at right angles on the flat, with the blades slightly curved on the edge and finely and sharply serrated.

"In operating with my cervix scissors, it is necessary to have strong double tenaculum forceps, so that the cervix can be held steady while it is removed by the rotary or sawing motion of the instrument. I have improved this tenaculum by combining with it another, to be introduced into the os and fastened into the tissue of the cervical canal. With such an instrument we can remove a cone-shaped piece by pulling down the intra-cervical tissue before introducing the outer teeth of the tenaculum, and then, after the external mucous membrane is divided, by pulling gently until the cervix is excised. There is no necessity of dividing the mucous membrane so high up, and therefore the danger of cutting into the peritoneum is less. With my scissors and this tenaculum the excision may be performed without risk of wounding any part of the vagina."

The reader will observe that my scissors performs the functions of a saw; and, since the publication of my device, a friend has suggested that "cervix saw" would have been a most appropriate name. Dr. Clark's instrument cuts by closing the blades, just like any ordinary scissors, differing only in the size and

extent of the serrations in the cutting edges. Mine does not act by pressure alone, but requires to be rotated, thus literally sawing through the flesh. Dr. Clark leaves the stump to heal by granulation; I unite the vaginal edges and get union by adhesion.

So far from the principle involved in the matter of serrated cutting edges being claimed by me, it has certainly been known as long as saws have existed. The edges of all cutting instruments are more or less serrated; even the sharpest razor will be found serrated if examined with a powerful magnifying glass.

ART. III.—*Chronic Granular Conjunctivitis.* By T. E. MURRELL, M. D., of Little Rock, Ark. [Read before the State Medical Society of Arkansas, June 1, 1878, and ordered to be published.]

This formidable and disabling affection of the eyes, introduced into Europe from Egypt by the French army in the early part of this century, has been known by the various names of "Egyptian Ophthalmia," "Contagious Ophthalmia," "Military Ophthalmia," "Granular Ophthalmia," "Granular Lids," and "Trachoma." As early as 1828 the enlarged papillæ gave rise to the term *granular*, from their resemblance to a granulating sore; but it was not until 1848 that Dr. Löffler, a Prussian surgeon, discovered and called attention to the true granular bodies, which were still later described by Drs. Marston and Frank as "sage grain" granulations.

The true pathology of this disease is still as much a mystery as tubercles, to which the granular bodies have been compared, and with which they are held by some as identical. But no one has been able to prove the identity of the two pathological products, and it is quite probable, from more recent discoveries, that the nosology is altogether incorrect.

The point of division among most pathologists now is, whether true granulations are the result of a hypertrophy of products normally existing in the conjunctival mucous membrane; or are they neoplastic growths springing up from a structureless tissue and assuming the forms they afterwards present? The

former view ascribes their origin to a hypertrophy of the follicles of Krause, which lie just underneath the epithelial lining of the conjunctiva; while the latter considers them to take their origin from the connective tissue corpuscles, from which they develop an entirely new and different structure—hence a *neoplasm.*

The hypertrophy theory would appear the more plausible were it not that granulations are often found where the follicles of Krause have not been shown to exist, viz., on the ocular conjunctiva.

These various theories have but little practical bearing on the subject; and suffice it to say that the so-called granular bodies constitute the distinguishing feature of the disease. The natural tendency of them is to a retrograde metamorphosis. Having formed and run through an irregular course, they break down and leave a contracted cicatrix in their former site. This seems to be the method Nature has adopted for their riddance. But before this occurs many changes take place in the mucous membrane of the lids. Constituting a foreign body, as it were, they excite more or less irritation with congestion of the conjunctival blood-vessels from time to time, being made worse on any exposure to wind or dust, and varying with the immediate state of the health from day to day, until finally the irritation and hyperæmia culminate in an acute attack of conjunctivitis. This may be slight and soon run its course; else severe, taking on the features of purulent ophthalmia. It differs from other forms of purulent or muco-purulent conjunctivitis by the greater degree of photophobia and lachrymation; and, as a rule, of the more intense injection of the ocular conjunctiva, giving rise to the name of "red sore eyes," so often heard of among the laity. The neurotic element of the disease is further shown in the so-called ciliary neuralgia—pain in and around the orbit, often extending over the side of the head and as far back as the occiput and back of the neck. After a more or less profuse suppurative discharge, passing over a variable length of time, the inflammation abates, the pain and photophobia disappear, the swelling of the lids subsides, the ocular conjunctiva clears up, and the patient considers himself well. After awhile, either

from exposure or spontaneously, another attack sets up and goes through a similar course perhaps. Thus repeatedly the exacerbations occur, the patient in the meantime complaining of weak eyes that "catch all the sore eyes going."

Each of these inflammatory conditions causes an increase in the size of the granular bodies until, whereas, probably visible at first only with a lens, they have now become so large as to bear the name of frog-spawn granulations. The papillæ of the lids, normally invisible, become engorged and erected at each attack, and eventually their capillary loops become distended, and a state of chronic congestion and enlargement, followed by hypertrophy, results. In the later and more chronic stages, especially if the inflammatory state has occurred frequently or become fixed, they are so much enlarged as to spread over the granulations, entirely hiding them, and are themselves often mistaken for the true granular bodies.

In any chronic conjunctivitis these papillæ become enlarged, and the condition is known as papillary, in contradistinction to follicular conjunctivitis; the latter representing true granular lids. Having arrived at this stage when the papillæ are much hypertrophied, there is generally pretty high and constant inflammatory action with free muco-purulent discharge, which, however, is kept constantly washed away by the continual flow of tears.

The hypertrophied and infiltrated conjunctiva leads to much thickening, particularly at the retrotarsal folds, causing the lids over these parts to look puffy. It is just here, in the retrotarsal fold, that the greater changes take place, being the primary and most active seat of the disease. On everting the lids now, their under surface presents a raspberry appearance. This roughened condition, by constantly rubbing against the surface of the cornea during nictitation, causes continual irritation, which leads to infiltration of its epithelial layer and the formation of new blood-vessels that creep over the periphery towards the centre, until its entire surface is covered with a vascular network. The irritation of the cornea acting through the reflex centres produces spasm of the lids, which further increases the corneal complication by the pressure thus exerted on the eye-

ball. The irritation continuing, the destructive action goes on. The cornea becomes deeply infiltrated, new connective tissue is formed in its epithelial layer and even underneath Bowman's membrane, which, permeated by the mesh of congested veins and arteries, gives it the appearance of a piece of raw flesh. It is sometimes so dense that scarcely a trace of the natural cornea can be seen. The photophobia is due to the corneal irritation, but when the pannus becomes very dense the retina is no longer affected reflexively. The corneal trouble may extend beyond that of dense opacity. The inflammation may lead to a thinning and yielding of its coats until staphyloma, with all its hideous deformity and destruction of vision, follows. This occurs only in the later stages of the severe and protracted forms of the disease.

The granular bodies are now undergoing absorption and cicatrization while contraction is taking place. The lids become incurved and the palpebral fissure narrowed laterally. Distortion of the cartilages takes place, their normal curvature being substituted by one suited to the deformed lids. This contraction of the lids militates against relief of the corneal complication by more closely grasping it and rubbing over it the increasingly roughened surface. The edges of the lids being incurved, the cilia now rub the cornea, adding still another complication. The follicles of the cilia become diseased, and they begin to drop out, break off, and become distorted, until finally a few scattering, straggling stubs, turned in various directions, only remain, which jag the cornea at every motion. It is now very difficult to evert the upper lid; on doing so the oculo-palpebral cul-de-sac is found to be obliterated. The motion of the eyeball is limited, the contracted conjunctiva being drawn tense in every opposite movement. The lachrymal passages have, in the meantime, shared in the diseased action, and now there is a constant overflow of tears on the cheek. The condition of the patient becomes pitiable in the extreme. His nerves become shattered, so that whereas he was once a man of fortitude, he now loses all moral courage, and shrinks at the slightest intimation of pain. He loses his appetite, becomes pale and careworn; loses his spirits, and oftentimes his temper, and in some instances borders

on mania. I saw one instance where the suffering was so intense that anodynes failed, and several men were sometimes required to hold the patient in bed during one of the exacerbations, who, all the while in his incoherency, begged them to bore a hole in his head to let out the pain. This patient had been two years confined to the house and one year to his bed. One year later he could barely see to go about. No longer able to see his way distinctly, the victim gropes in obscurity, eternally harassed with the most excruciating pains; all useful sight gone, yet tortured with so constant a reminder of what were once the source of his greatest happiness. Many years after all practical sight is gone, the lids still remain diseased and painful; and I have often operated for the relief of symptoms in those long since hopelessly blind.

In the institutions for the blind are found many such cases that demand surgical aid on humane principles alone. Total blindness—that is, the loss of perception of light—rarely ever results from granular conjunctivitis, except in those instances where the inflammation extends to the deeper tunics of the eyeball and produces a suppurative panophthalmitis; but all useful vision, in so far as the patient's ability to follow his vocation is concerned, is often destroyed.

The etiology of granular conjunctivitis is to be sought in contagion and a constitutional diathesis. Several members of the same family may contract an ophthalmia; one will have muco-purulent, another purulent, a third perhaps diphtheritic, and a fourth granular conjunctivitis. The same septic matter may have found its way into the eyes of each one; the result is due to the general blood state and the healthfulness of the conjunctiva at the time of inoculation. The healthiest and least impressible will resist the septic influence in so far as to become only a case of moderate inflammation with slight muco-purulent discharge; the second has less resisting power—the individual is probably cachectic—and violent inflammation with profuse suppuration is the result; the third bears the diphtheritic poison in his system, and a true membranous conjunctivitis with all its fearful consequences follows; the fourth is in that condition in which septic matter of any kind will produce a granular con-

junctivitis. In the first place, defective hygiene is the most fruitful predisposing cause of this affection; bad food, foul air, uncleanliness in person, and deprivation of those cheering influences so essential to the maintenance of a well-toned state of the nervous and vascular systems. Overcrowding plays an active part in public institutions, barracks, and wherever large bodies of persons are congregated in a small compass; but it rages in countries sparsely settled. Under the former circumstances, no doubt, contagion is the more powerful agent, defective hygiene acting as an auxiliary.

In examining a large number of persons, it will be found that there are many whose eyes are complained of occasionally as feeling a little rough, of being sensitive to a bright light, particularly artificial light, and being, as they express it, "weak." On everting the lids, the conjunctiva will be found to contain scattered over its surface more or less sparsely small white sago-looking bodies, closely resembling herpetic vesicles. They lie just underneath the epithelium, and, contrary to their appearance, their contents can not be emptied by pricking. They consist of a connective-tissue stroma, and contain a few cells like lymph corpuscles and a little fluid, and are surrounded by a condensed connective-tissue layer, but not forming a true enveloping membrane. They may exist for some time without the patient being aware of any trouble, but usually the symptoms described above manifest themselves together with an occasional injection of the palpebral conjunctival blood-vessels. This condition is known as vesicular conjunctivitis, and is now believed to be the forerunner of the granular form. At least there seems to be a stronger tendency in eyes thus affected to take on true granulations, although it must be admitted that genuine granular conjunctivitis is often developed in eyes where this vesicular condition has never existed. This condition is most frequently found in those whose general health is depreciated, and just the class in which true granular disease is most likely to be developed.

It is rare that a genuine case of granular conjunctivitis is found in the upper walks of society; but the poorer classes, and particularly those who combine with poverty a criminal negli-

gence of all sanitary laws, are the ones doomed to suffer the fearful consequences of this disease. Poor to begin with, having no recourse but daily toil on which to subsist, this unfortunate class furnishes the surgeon with much to do and small remuneration. The destructive consequences of this fearful malady among the poorer classes are, in some sections, truly appalling.

In our Blind Asylum at Little Rock, I found fifteen per cent. being educated in this institution from this cause. I know whole families afflicted with it and scarcely able to support themselves, while one entire family of six or seven members I saw were totally helpless, and I know many families in which several members are sufferers. It is the most destructive and most unyielding disease of the eyes we have to deal with in our climate.

The prognosis is always uncertain, to say the least, in chronic granular conjunctivitis, and unfavorable where corneal complications exist. Many weeks, months, and sometimes years, are passed in suffering before a subsidence of the disease, leaving the eyes in the more protracted cases dry for lack of normal secretions, dim of sight either from corneal haze or irregular refraction from alteration of its curvature where more serious impairment of sight does not result, as in many instances.

I wish I had something positive to say in regard to treatment, but unfortunately "magic eye drops" and "universal eye salves" here lose their charm. Everything in the animal and vegetable kingdom in the way of alteratives, astringents, and caustics has been tried. The various salts of iron, copper, zinc, lead, silver, alum, and mercury; salicylic acid, iodoform, and carbolic acid; tannin, hydrastis canadensis, and various other vegetable astringents, have each and several been tried and had their admirers. Counter-irritation, scarification, and scraping the lids, and every heroic measure imaginable has been adopted by empirics. The English rely almost exclusively on nitrate of silver in solution of various strengths of from two to twenty grains to the ounce. Some men of large experience have gone back to the sulphate of copper pencil; some rely on mild astringents, with tonics and alteratives internally. After some expe-

rience with this affection, I have lain aside all routine treatment, and now apply remedies according to symptoms, condition of patient, and susceptibility of eyes to impressions. If the granulations are sluggish and inflammation moderate, or of a low grade, the bluestone pencil lightly drawn over them once a day, or every two days, to induce a healthy hyper-action, is beneficial. If the inflammatory action runs too high with much engorgement of the palpebral and ocular conjunctiva, perhaps chemosis and generally pannus—which, according to my observation, is the state most frequently met with—light scarification of the conjunctiva of the lids and also of the eyeball if there is much chemosis, followed by cold applications where there is little ciliary neurosis, otherwise warm fomentations kept up for half an hour two or three times a day, give most relief. If suppuration becomes too profuse, a weak solution of nitrate of silver, sulphate or chloride of zinc, should be frequently dropped into the eyes. Acetate of lead should never be used, on account of the danger of a corneal deposit. If photophobia is severe, benefit is to be derived from atropine. An ointment of iodoform I have found exceedingly soothing, and it has a beneficial effect on the corneal complications. I generally use it in the strength of two to three grains to the drachm of cosmoline, which I now universally order as an excipient for ointments for the eye. Severe measures, such as strong astringent solutions, frequent or violent caustic applications, deep scarification, or scraping the hypertrophied villi, I have found invariably hurtful. My course now is to look to the general health and direct such treatment to the eyes as the circumstances of each individual case would suggest. Above all, eschew heroic measures. Let the treatment be mild. Whatever produces too violent pain or irritation will not produce a cure. Empirics have destroyed more eyes in this State than the unmolested disease. The most favorable cases I get to treat are those who have let the disease take its natural course; while the worst are those who have first run the gauntlet of the neighborhood eye doctor or some peripatetic whose presumption exceeds his knowledge, and whose cupidity outweighs his honesty. Patience and perseverance on the part of both physician and patient are necessary.

I have seldom cured a severe case under many months. A perfect restoration of the eyes is seldom attained, but under judicious management a pretty fair recovery with useful vision may be gained in the majority of cases.

Before concluding this subject, I wish to say something of prophylaxis. It is a noticeable fact that granular lids are rarely ever met with among those in the higher walks of life, but seeks its victims among the poor and laboring classes. This is because the better classes feed better, live in more wholesome air, sleep segregated, are more careful in their personal cleanliness, and shun the contact of a soiled towel or garment from a sense of decency, thereby preventing the introduction into the eyes of septic matter from any source. The poor live on harsh, indigestible or unwholesome food, sleep many in one apartment, seldom bathe, though their labor most requires it, wear the same clothing a whole week, all the family wash in the same basin and dry on the same towel, and have a very great disregard often for that keeping of person and house denominated *decent.* Contagion entering such a family finds a fit nidus for its growth and multiplication.

Ophthalmia breaks out. It passes from eye to eye by contact of soiled articles of clothing or ware until the whole family have it. Just in this class we find the proper condition for the development of granular conjunctivitis. Some may escape; in fact the majority usually do, but most likely several members of the family will have it. Ignorance and that unconcernedness so frequently found to exist in this class of people do not keep away neighbors, who become likewise afflicted. It is fortunate that even among this class so few eyes develop the true granulations; but the proportion is sufficiently large to be a dreadful scourge when an epidemic of ophthalmia breaks out among them.

Now, how can the spread of granular conjunctivitis be prevented? This is a work that belongs to the Medical Profession, and who are, to a great extent, responsible for it. Physicians throughout the country should use their influence in inducing the poorer classes, and not always the poorer, however, to live more in accordance with the laws of health. I have traveled

a good deal over this State, stopping at some country house or hut for refreshments, and my observation teaches me that, as a rule, people throughout the country, excluding towns and villages, live on a most unwholesome diet. Bacon and badly-baked bread, with coffee wretchedly made, without butter or milk, or vegetables even in summer, constitute the dietary of the greater proportion of our country people than some would imagine. Teach them some of the rules of diet, and let them learn to live on more generous food and to cook it better. When a case of contagious ophthalmia occurs—and every case is contagious where there is purulent matter discharged from the eyes—enforce the necessity of entire separation of the patient from the other members of the family, and avoidance of contact either of hand or garment, towel or basin, that the patient has used by any one except the nurse or doctor. This may seem annoying to people whose household furniture is spare, and who are accustomed to sleeping two or more in one bed, and using one basin and towel; but by impressing upon them the great danger of neglecting these precautions, they can appreciate the economy to be gained in the end, and having once learned their value are not apt to forget these simple but important rules.

If by calling the attention of the Profession throughout this State to the importance of this subject I can get their coöperation in instituting means for checking the spread of the most painful and disabling affection that the superficial parts of the eye are exposed to, this paper will have performed its mission, and shall truly prove a source of great satisfaction to the author.

Muscarin.—Through the investigations of Dr. Lauder Brunton, in England, Professor Schiff, in Italy, and others, it has been known for some time that we have a certain antidote for the poison of toadstools (muscarin) in belladonna and stramonium, used either in the form of a tincture made from the leaves of the plants or in that of their alkaloids, atropia and daturia. *Scientific American.*

ECLECTIC DEPARTMENT.

"Carpere et colligere."

ART. I.—*An Inquiry into the Condition of Fifty-one Cases of Lithotrity in Elderly Adults, made at periods of one or two years after operation.* By SIR HENRY THOMPSON, Surgeon Extraordinary to H. M. the King of the Belgians; Emeritus Professor of Clinical Surgery in University College; late Surgeon to the Hospital. London, England.

In "The Lancet" of April 3d I reported the results of my last 100 stone operations (lithotomy and lithotrity) on adult patients averaging 63½ years of age, amongst whom there were 6 deaths, and consequently 94 recoveries. Mr. Thomas Smith made an inquiry in the following number of the journal relative to the condition of the patients on whom *lithotrity* had been performed, at any period not less than twelve months after the procedure, with the view of ascertaining whether the results of that operation were permanent. Such an investigation I thought desirable, and promised to make it; for although the general results must be well known to myself, I had never applied an exact or numerical test in order to determine them.

I have therefore sought, by writing and personal interviews, to obtain information of the present state in all those cases of this series in which the operation of lithotrity was performed more than twelve months ago—that is, between December, 1872, when it commenced, and May, 1874. Consequently the time after operation is much longer than that which Mr. Smith suggested, for while the last case was treated fully twelve months ago, more than two years and a quarter have passed since the first of the series was operated on.

I find that between the dates named—a period of about seventeen months—I performed lithotrity on 53 patients, of whom two died, leaving 51 cases of recovery. The mean interval between the date of operation and the present report of condition, for these 51 cases which are the subject of inquiry, is therefore about twenty months instead of "one year." An examination of these cases, given in careful detail, shows that respecting six patients I have been unable to obtain the

information required; but the weight of such evidence as exists relative to these is greatly in favor of their being better and not worse than the average, since their mean age is only fifty-four years, nearly ten less than the mean of the whole series. As I am compelled to omit these from my reckoning, I believe that my report is less favorable to lithotrity than it ought to be.

The number of individuals, then, of whom I have precise information is 45, averaging about sixty-four years of age. Of these, 11 have since died. The causes, certified by their medical attendants, were—2 of organic heart disease; 1 of malignant disease; 1 at eighty, of natural decay; the other 6 of urinary disorders and advanced age together (the mean age being sixty-six years). All but one of these latter were individuals who for several years had passed no urine except by catheter, who owed their lives solely to surgical art, and who without it must have died miserably some years before. The prolongation of life had been entirely due to the improved modern means of mechanically removing retained urine and accumulated phosphatic deposits. Of the 45, 34 are living still; 28 of them enjoying good health and active existence, at a mean of sixty-three and a half years of age. The other 6 have some signs of recurring calculus, 2 having had a newly-formed calculus removed; all are well but one of these, who is in bad health and suffers much.

I think I may leave these figures to speak for themselves. I shall make one observation, however, which, although a very natural one, does appear not to receive the consideration which I think it deserves. Supposing that these 53 cases of lithotrity (including 2 deaths with 51 recoveries) had been cut instead of crushed, how many fatal cases would have followed the operation? Their average age being sixty-three, 14 deaths would not have been a bad result, somewhat better than published tables offer us.* But after these operations, mainly done in 1873, only 11 deaths have since occurred *up to the*

* I may refer to my own table of 1,827 cases, collected with great care, among others, as supporting this view. "Lithotomy and Lithotrity," second edition, page 142.

present date. And even if we were to reckon all these as deaths resulting from the operation, although, as may be seen below, they were quite unconnected with it, we still should have a total of recoveries larger than after lithotomy. There is, however, much reason to believe that the few examples of chronic cystitis with recurring phosphatic deposits, subsequent to lithotrity, occur generally in those feeble and diseased persons to whom lithotrity is most commonly fatal. The fact is, that almost all those patients whose subsequent troubles remain, and who, to superficial observers, appear to discredit lithotrity, do in reality owe their existence to the operation, and are trophies of life absolutely saved by it.

Thus it is that lithotrity, as I have observed, has created a new set of cases—men who, until the process was brought pretty nearly to its present perfection, never lived. Respecting them, I should like to write the results of my experience, and hope ere long to do so. They are men whom lithotrity keeps alive—who, thanks to the ease and safety with which a small and newly-formed phosphatic calculus can be crushed, go on for years to live and even to be active. These cases have to be kept apart from other cases of stone, because it would invalidate any inference from numerical statements were a surgeon to reckon as a "case of lithotrity" each time, perhaps twice a year or more, he removed a calculus from such a patient, although it might not always necessarily be very small. But it is not to be forgotten that before the time of lithotrity there was no adequate help for such a patient except by the cutting operation, and many such died miserably with bladders filled with phosphatic material.

I am very glad to have made this inquiry, although it has entailed no little pains and labor; since I venture to hope that it may prove to be, not merely a new, but also a useful contribution to our own knowledge respecting lithotrity.

1. A gentleman aged thirty-six; operation, November, 1872; uric-acid calculus. I have no knowledge of the address. He made an excellent recovery; and I should, at his age, have probably heard more of him if his health had not continued good.

2. A gentleman aged seventy-five; operation, December, 1872; phosphatic calculus. In May, 1875, Mr. Gardner, of Gloucester-terrace, reports to me this patient in his usual health.

3. A gentleman aged sixty-nine; operation, January, 1873; uric-acid calculi. This patient, who was under the care of Mr. Newton, of Upper Wimpole Street, writes me (June, 1875): "I am in perfectly good health, and have no uneasiness or feelings that lead me to suppose I have any stone in my bladder now."

4. A gentleman aged sixty-five; operation, January, 1873; phosphatic calculus. Mr. J. H. Bartlett, of Nottinghill, writes me that this patient had no further symptoms of calculus, and that he died of heart disease three months after.

5. A gentleman aged sixty-eight; operation, January, 1873. This gentleman had for many years passed all his water by catheter. His life had been prolonged, with very advanced prostatic disease, by great care and frequent removals of phosphates as they formed. He died, his urinary organs being quite worn out, with extensive sacculation of kidneys and ureters, in December of the same year.

6. A gentleman aged fifty-one; operation, February, 1873; uric-acid calculus. Mr. Allen, of Millner Square, Islington, writes me (May, 1875,) that this patient is perfectly well.

7. A gentleman aged thirty-six; operation, February, 1873; uric-acid calculus. No return, and is perfectly free from symptoms at present.

8. A gentleman aged sixty-four; operation, February, 1873; phosphatic calculus. This patient had always passed all his urine by catheter. He had no return of his stone. He became insane, and used the instrument very carelessly. In January, 1875, I was called to see him with severe extravasation of urine, resulting from injury, of which he shortly after died. I saw him with my friend Dr. Murchison.

9. A gentleman aged sixty; operation, February–March, 1873; phosphatic calculus. I heard from this gentleman a few days ago (May, 1875). He is in excellent health, and is leading a very active life.

10. A gentleman aged sixty; operation, March, 1873; uric-

acid calculus. Dr. Manson, of Chesterfield, writes me (June, 1875,) that this patient "remained quite free from any symptoms of recurrent calculus to the day of his death, which resulted from typhoid fever in December, 1873. He was perfectly satisfied with the result of the operation."

11. W. C., aged sixty-seven; operation, March, 1873; uric acid; treated at University College Hospital. For many years he has passed small uric-acid calculi; and, having recently had one in his bladder which he was unable to expel, it has been successfully crushed for him in the country.

12. A gentleman aged seventy-one; operation, April, 1873. Writes me (May, 1875,) that he continues quite well.

13. A gentleman aged sixty-seven; operation, April, 1873; uric acid. Recently seen by myself; he is performing his duty as a member of Parliament, and enjoys excellent health and strength.

14. A gentleman aged sixty-one; operation, April, 1873; I have just seen him. He is in perfect condition as regards his bladder. His stone was a large uric-acid formation. His medical attendant, Mr. Leppington, of Great Grimsby, writes me that "he has had no symptoms of any return of vesical mischief."

15. A gentleman aged fifty-nine; operation, April, 1873; oxalate-of-lime calculus. He was quite well six months ago, but I have not his address, and have failed to find him.

16. A gentleman aged seventy-nine; operation, April, 1878; uric acid. Had no return of his calculus, and died about a year afterwards of some other malady, apparently from natural decay.

17. W. B. H., aged sixty-three; operation, May, 1873; uric acid. Treated in University College Hospital successfully, and his present address and condition are unknown.

18. A gentleman aged sixty-seven; operation, May-June, 1873; large phosphatic stone. Writes me (May, 1875,) that he is perfectly well, and in better health than for many years.

19. A gentleman aged sixty; operation, May–June, 1873; large uric-acid calculus. Dr. Evan Jones, of Aberdare, writes to inform me that the patient had rigors in September, and

signs of blood-poisoning; no abscesses; and died comatose October 23d. He had left me in fair condition at the end of June with some suspicion that the kidneys were not sound.

20. J. W., (University College Hospital), aged fifty-four; operation, June, 1873; phosphatic calculus. Has long passed all his urine by catheter. Having just written to ask how he goes on, he replies that he was quite well for a long time after operation, but he begins to have signs of some phosphatic formation and wishes soon to be examined.

21. J. W., aged thirty-six; operation, June, 1873; uric-acid calculus. Treated successfully in University College Hospital, and his present address and condition are unknown.

22. A gentleman from the Brazils, aged fifty-six; operation, June and July, 1873; very large phosphatic calculus. One of the most formidable cases I ever had. He made a most excellent recovery, always, as before the operation, passing all his urine by catheter. He came to me last summer (two years after operation), and I removed a small phosphatic formation which had been developed, and he left me as well as ever.

23. A gentleman aged forty-one; operation, July, 1873. I have just seen this patient; he has enjoyed fair health, and has had no return of his malady. The stone was originally oxalate of lime, and he is subject to irritation in the urinary passages and occasionally to orchitis. He leads an active life.

24. A gentleman aged seventy-seven; operation, July, 1873; uric-acid calculus. In excellent health for his age. No return of his malady. Uses a catheter twice a day, and is under the care of Dr. Jackson, of Southsea.

25. A gentleman aged sixty-two; operation, October, 1873; phosphatic calculus. Had long passed all his urine by catheter and at short intervals. I removed a phosphatic calculus of considerable size, the result of constant cystitis; but he died exhausted from incessant catheterism about a year after.

26. A gentleman aged sixty-five; operation, August, 1873; uric-acid calculus. Seen again in the latter part of the year. Recovery perfect, but have not the address, and can not learn any later particulars.

27. An American gentleman, aged sixty-seven; operation,

August, 1873; phosphatic calculus. He wrote me in the following year that there was no return whatever of his complaint.

28. A gentleman aged sixty; operation, August, 1873; large uric-acid calculus. I can not learn anything of this patient.

29. A gentleman aged seventy-seven; operation, August, 1873; uric-acid calculus. I have just seen this patient (June, 1875). He has had no return whatever of calculus symptoms, and is passing his cathether three times in the twenty-four hours on account of inability to empty his bladder from enlarged prostate. He is enjoying excellent health.

30. A gentleman aged sixty-seven; operation, August, 1873; uric-acid calculus. This patient has not been much relieved. He passes his urine chiefly, if not altogether, by catheter, and, in spite of all treatment, phosphatic matter forms and must be removed.

31. A gentleman aged fifty-six; operation, November, 1873; a phosphatic calculus. He had no return of it. Mr. Pearson, of Manchester, writes me that he died of malignant disease in January last.

32. A gentleman aged seventy-eight; operation, November, 1873; uric-acid calculus. His medical attendant, Mr. Hicks, of Easingwold, writes me (June, 1875): "The patient has been perfectly free from vesical troubles ever since."

33. A gentleman aged seventy-six; operation, November, 1873; uric-acid calculus. Have just seen him (May, 1875): he has had no return whatever of his complaint.

34. A gentleman aged seventy-two; operation, November, 1873; oxalate of lime. I saw this patient a month ago (May, 1875). He is in perfect health, and has had no return whatever of his complaint.

35. A gentleman aged sixty-three; operation, November, 1873; uric-acid calculus. His medical attendant, Mr. Robert Parker, of Malpas, Cheshire, has just written me (June, 1875,) that this patient is "feeling as well as ever he did in his life."

36. A gentleman aged seventy; operation, December, 1873; He made a most excellent recovery; left me a hale and hearty man, and I have no doubt is quite well, but I have no clue to

his address. I believe he is living in Dundee or its neighborhood.

37. A game-keeper at Balmoral, aged sixty-one; operation, December, 1873; a phosphatic calculus. He has just written me (May) that he "is keeping well and able for his duty."

38. A gentleman aged sixty-four; operation, January, 1874; a large phosphatic stone. Seen with Dr. Holman, of Reigate. Had not emptied his bladder some time before operation. Still uses his catheter. In good health, and has no return of his malady.

39. A gentleman aged sixty; operation, February, 1874. This was a uric-acid stone of unusual size, and the difficulties were remarkable. I saw the case constantly with Mr. Blaker, of Brighton. He had long-continued troubles afterwards from inability to pass urine by his own efforts and frequent catheterism. He has slowly improved, and is now in a comfortable condition, with no return of stone formation.

40. A gentleman aged sixty-one; operation, February, 1874; a uric-acid stone. I have lost sight of him, and can not learn his address.

41. A gentleman aged seventy; operation, February, 1874. A uric-acid stone, complicated with advanced disease of the bladder. The former was easily removed, but no improvement took place, and he died of the latter about six months after.

42. A gentleman aged sixty-two; operation, February, 1874; a uric-acid stone. Called on me May, 1875. In excellent health; no reäppearance of stone symptoms. Occasionally under the care of Dr. Macdonald, physician to the Duke of Argyle.

43. A gentleman aged sixty-seven; operation, February, 1874. Died suddenly of mitral disease about ten days after the stone, mixed oxalates and urates, was successfully removed.

44. A gentleman aged seventy-eight; operation, March, 1874; phosphatic calculus. Has many years passed all his urine by catheter, and had had a stone removed in 1870; the second in 1874, after which he lived about five months.

45. A gentleman aged sixty-six; operation, March, 1874; very large uric-acid calculus. This gentleman has just written

me (June, 1875): "I am well pleased to inform you that I have been very well indeed until the latter end of March." He adds that he has lately had a little irritability of the bladder, which has passed off.

46. A gentleman aged seventy-two; operation, March, 1874; uric-acid calculus. Seen with Mr. Sibley, of New Burlington-street. Is now (June, 1875,) in perfect health; no sign of his malady remaining.

47. A gentleman aged fifty; operation, March, 1874; a uric-acid stone. Has been in excellent health since. In January last he passed a small uric-acid calculus per urethram. He is now living at Antwerp, and is quite well.

48. A gentleman aged sixty-five; operation, April, 1874; a phosphatic calculus. This patient had for many years passed all his water by catheter, frequently doing so as often as twelve to fifteen times in the twenty-four hours. He has been quite well until lately, and has just called (June, 1875,) to inform me that the symptoms have reäppeared. I find a re-formation of phosphatic matter, which I shall have to break up and wash out. Otherwise his health is excellent.

49. A gentleman aged sixty; operation, April–May, 1874; uric-acid calculus. He called on me in February last, in excellent health, and without any symptoms of his old complaint, and walking several miles daily.

50. A gentleman aged sixty-eight; operation, May, 1874; large uric-acid stone. Dr. Lambert, of Sunderland, writes (June, 1875,) his "condition at the present time is perfectly satisfactory."

51. A gentleman aged sixty-one; operation, May, 1874; uric-acid calculus. Dr. Helsham, of Brixton-road, writes, in (May, 1875,) that this patient is travelling on the Continent in perfect health.

Rice Glue.—The fine Japanese cement is made by mixing rice flour with a sufficient quantity of cold water, then boiling gently, with constant stirring.

ART. II.—*The Artificial Feeding of Infants—Prevention of Summer Diseases.* ("Pacific Med. Journal.")

There are a few more points concerning which it may be as well to speak before we go on with the care of the mother. I have already objected to the giving of herb-teas to a new-born child. The child is not of necessity sick, and there is no need of its being made so. It is not even hungry. There is no reason for giving sugar and water, or molasses and water, which will grow acid, or milk and water, or even simple water. But look out for the nurse, unless you know her well, or the child will surely get a few spoonfuls of some one of these things, or of some physic. The "red gum" or "red goom," as it is called, haunts the minds of nurses and grandmothers, and if it is not brought out upon the child's skin within a day or two, all the ailments of the next six months will be attributed to its absence. But what is "red gum?" Simply an eruption somewhat papular, which shows that the little one's stomach and bowels have not been in good working order. If it does not appear we know that the nurse has not overdosed the child. It bears the same relation to the saffron-tea, which the child has had, that the nettle-rash which afflicts some of you will bear to the spoiled lobster or the old mackerel if you eat it. And that is all.

If the child, after being dressed, is covered with a blanket and put in bed, it will, as a rule, sleep for the greater part of the time for the succeeding twenty-four hours without crying. But this is not always the case. Some children cry for food earlier, and some do not show any signs of hunger till the mother's milk comes. It may be that the mother is not going to nurse the child, and perhaps she has no thought of employing a wet nurse; under such circumstances, when and how will you feed it? Now, this is a matter concerning which there are very numerous opinions. It is not my intention to tell you what other people say. I am simply going to give the result of my own experience. You can judge for yourself after you begin practice whether I am right or not. The natural time to eat is when you are hungry. So it is for your child. One of you is hungry only twice in twenty-four hours; another of you only once in that time; a third can eat and needs food four times in

the twenty-four hours, and he is made sick and unfit for his duty if he is cut down to two meals; while he who needs but one will be uncomfortable and ailing if you force him to take two or three meals a day. It is precisely the same with the new-born children; one of them needs food every two hours, and another will go six hours without it. If you oblige the first one to go four hours, he is hungry and cross. If you force the second one to eat every two hours, the discharges become bad-looking, and his mother wonders that soothing syrup and paregoric will not stop his pain. You are simply giving the baby a dyspepsia. Let him alone, and do not try to feed him because the breast is full, or because the hands of the clock point to a particular hour. If he is asleep, let him sleep.

But of what is the food to be prepared? Remember that I am as yet speaking only of the child who is artificially fed. It is to be as nearly an imitation of the natural food as possible; and milk fulfills that condition. The milk of the woman resembles that of the cow in some degree. How does it differ? The woman's milk has in its composition more water, more sugar, more alkali, less butter, less cheese; and that cheese, in consequence of the alkali, is a much less firm cheese. Try the experiment for yourselves by taking woman's milk and cow's milk in different tubes and adding a trifle of rennet to each. The difference in the curds will surprise you at the end of twenty-four hours. The proportions of milk and water must vary with the character of the milk. It is not necessary that it shall be all "one cow's milk." If it were, you could not get it in our cities; and if you could, you know nothing of the cow; and if you did, one cow's milk differs from another's as much as the milk of two women differs. A safe way is to begin with a very weak mixture, taking the upper part of the milk, because it contains more cream and less cheese than the lower part. If it is followed by discharges of undigested curd, add from half a grain to a grain of bicarbonate of potash to each fluid ounce of milk. If the discharges still contain curd, water the milk more. Do not be afraid of starving the child by doing this. Milk which will not digest will not nourish; on the contrary, it irritates, and, as is the case with any other undigested food, one

can starve with a stomach filled with it. I know that many nurses and many of our own profession will shake their wise heads in doubt upon this point, but you can show the cases which will prove the correctness of the statement, and cases of children fat now, who were emaciating on clear milk, before you made the change. I give you now the safe rule for the proportions of milk and water. There are, of course, variations to be made according to the peculiarities of different children.

Age of Child.	Milk.	Water.
3 to 10 days	8 parts	21 parts.
10 to 30 days	8 parts	20 parts.
1 month	8 parts	18 parts.
2 months	8 parts	15 parts.
3 months	8 parts	12 parts.
4 months	8 parts	10 parts.
5 months	8 parts	8 parts.
6 months	8 parts	7 parts.
7 months	8 parts	6 parts.
9 months	16 parts	11 parts.
11 months	8 parts	5 parts.
14 months	16 parts	9 parts.
18 months	18 parts	8 parts.

It would be well to mix at one time the amount required for an entire day. What is left in the bottle after a feeding should be thrown away, and the bottle should be scalded before it is used again.

In this matter of feeding children, I must not forget to call your attention to the time when a tooth presses upon the gum. No matter what the age of the little one may be, that is not the time to add to the strength of the food. On the contrary, as with any other disturbance of the system, there is apt to be fever, and it would be wiser to increase the water, at such a time, if the curds begin to show in the discharges. Most surely should this be done if vomiting follow feeding. Gentlemen will be astonished to find the effect of more water in the milk to be better than paregoric or astringent tinctures in checking diarrhœa; but it is so. They will also find, after they have deprived the little one of fluid, because it is all thrown up as soon as taken, that if in place of medicine they will let the stomach be filled with cool water, it will come up with but little

retching, and will be followed by a long respite from the straining which is sure to follow a teaspoonful or two.

Many will say to you, use condensed milk. What is condensed milk? Why, milk from which a part of the water has been removed by evaporation and a part of the butter by skimming; or if solid, there has also been starchy matter added to it. It is poor food for a child. When I say this, I am speaking of all condensed milk; both the imported article and that which is prepared here. I am aware that fat and strong children can be shown whose only food has been condensed milk. That proves only that some children can bear it. So some adults can digest articles which will produce pain and diarrhœa and vomiting with the great majority of adults.

The same may be said of arrowroot, and of the various preparations of corn and wheat, which are largely advertised as food for children. They are not the natural food, and those are peculiar stomachs which can manage them.

The second summer is dreaded by most mothers. Why? Because their children, by the second summer, have learned to take other than natural food; they have lost their taste for the natural food; a great change consequent upon dentition is going on; digestion is disturbed; and the child who has apparently exceeded in healthfulness and strength its companion who has been allowed milk only, now begins to run the gauntlet of cholera infantum, dysentery, and convulsions. We are called upon to see the enormous percentage of children who die before the first dentition is completed, and to say why the time for cutting the cuspidati is so much worse for them. I can only say, gentlemen, try the experiment of confining a few children to the breast or to the bottle of milk. You will find enough examples of the others without asking for them. Were these children confined to the milk diet alone, the medicine needed by them would not be calomel and chalk, nor opium, nor kino; and the percentage of deaths among them would be smaller. The extra dilution of the milk would, as a rule, answer the whole purpose better than physic. I never saw a case of cholera infantum in a child who was kept till the dentition was complete upon breast milk alone, or upon properly diluted cow's milk alone. I never saw such a child starve.

Before closing the remarks upon this subject, I must say a word about the apparatus for feeding with. The spoon is not the best. The drinking-cup is not so good as the spoon. The food is swallowed too rapidly from either, and without becoming mixed, as it should be, with saliva. A common four or six-ounce vial, which can be easily washed and rinsed, is the best apparatus. For a mouth-piece a bit of linen wound about a quill and put in in place of a cork is good. It can be thrown away after being used once. The next best mouth-piece is a black-rubber nipple stretched over the mouth of the vial. The white rubber makes some mouths sore. The long rubber tube with glass attachment at the inner end and a nipple at the other is the worst of all. You can not keep it clean, and it only serves lazy nurses who wish to feed the child without taking it from bed. The little brush which is sold with it is of very little use, and gets foul without cleaning the tube.

I know there are many who will laugh at the proposition to keep a child upon milk till its first sixteen teeth are through the gum; they will show you children who have fed upon boiled ham and meat pies before they had any teeth, and who have lived nevertheless. And others can show you men who have been shot through the head and have lived; and a woman who, while advanced in pregnancy, was compressed between the seats of a railroad car by a locomotive engine, and yet has lived, and given birth to a living child. What does it all prove? Why, simply that mankind is tough—sometimes.

Keep records of your cases, and I believe that when you look back upon them you will find it to be the fact that, however well those children appear who are fed upon other things than properly-diluted milk, before the first sixteen teeth have passed the gum, more of the other class reach the age of five years.

The widow of Hahnemann, the founder of homœopathy, died recently, at the age of seventy-eight years, at the house in the Rue du Faubourg St. Honore, Paris, which had for a long time been her residence.

ABSTRACT DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."

CONDUCTED BY EDWARD MILLER, M. D., LOUISVILLE, KY.

Lecture on Urethral Fever. By REGINALD HARRISON, F. R. C. S.—Mr. Harrison said he would first notice certain complications which may be regarded as accidental to the course and treatment of surgical diseases of the urinary organs; and, in the first place, would state that no operation in surgery, however slight it may appear or dexterously performed, could be regarded as absolutely free from danger. Nature will at times resist interference, however loudly demanded, in a manner little anticipated and often inexplicable; and in this "chapter of accidents" there are certain phenomena occasionally following the passage of instruments along the urethra to which has been applied the name of "urethral fever." It not infrequently happens that a few hours after the passage of a bougie or sound, the patient experiences a sense of chilliness; this rigor, as it is technically called, is usually followed by more or less febrile excitement, which quietly subsides without causing the patient much inconvenience or distress. On the other hand, similar symptoms, but of the gravest intensity, are speedily followed by death. In rare cases death has occurred from the introduction of a bougie in six hours and a half. Varying between the two extremes just mentioned, there is every degree of severity, but in all a resemblance to fever can be made out. These symptoms, whether mild or severe, are undoubtedly due to shock, propagated by the sympathetic system, which, as is well known, so largely supplies the generative organs. Various considerations support this view, and at the same time suggest how such complications may be avoided. When anæsthetics have been used, an entire absence of serious symptoms following catheterization is observed, thus indicating that a consciousness of pain is an important factor in their production. Now, there is no pain so telling as that caused by tension, as when a tightly-fitting instrument is slowly passed through a strongly resisting contraction. Hence it is of the first importance to stop short

of reaching that sized bougie which can be passed with only a moderate degree of force. Again, there can not be a doubt that patients suffering from structural disease of the kidney are more liable to these attacks than those not so affected. Such persons we know are more readily shocked than others, and consequently in them surgical interference must be confined to what is necessary to the exigencies of the case, and not pushed to a complete cure. It is, therefore, of the greatest importance to make a careful examination of the urine, where circumstances permit, before the treatment of stricture of the urethra.

In regard to the treatment of urethral fever, only a few observations are necessary; and, first of all, in reference to its prevention. When we have reason to fear a rigor coming on after the passage of an instrument, a two-minim dose of Fleming's tincture of aconite should invariably be given immediately after the operation. On the occurrence of a rigor, quinine in five to ten-grain doses should be used, combining it with aconite when there are any indications of febrile excitement. In the management of suppression of the urine, which more or less attends the severer cases, our efforts should be directed to diminishing the excreta which the kidneys fail to do. This may be done by acting on the skin with vapor-baths, or what is almost equally efficacious, by placing the patient in a hot bath, and then enveloping him in blankets. Infusion of digitalis is strongly recommended for its action on the kidney when more stimulating diuretics would be out of place. Brandy and milk may be given, as circumstances require. Cases of urethral fever are occasionally so serious and apparently so out of proportion to the cause producing it, that it is well at all times to remember, in treating stricture, the possibility of its occurrence.—*The Lancet.*

The Application of Magnets for the Removal or Displacement of Iron or Steel Chips from within the Eye.—Mr. Macdonald McHardy read notes of a case illustrative of such use of magnets before the Clinical Society of London on March 22, 1878. A chip of steel had passed into the eye and was seen

sticking in the lens. On the approach of a powerful electro-magnet, the chip left the lens and fell within the anterior chamber, whence it was removed by excision. The lens was afterwards absorbed, which, however, could not be attributed to the operation, as the forceps did not come in contact with the lens. Mr. Carter stated that the position of the chip was such that any other attempt at removal would have jeopardized the eye. Reference was made to papers by Dr. McKeown, in the "Dublin Journal of Medical Science" for September, 1876, where three or four similar cases are recorded.—*Brit. Med. Jour.*

Laparo-Elytrotomy. By Dr. T. G. Thomas.—Dr. Thomas first gives an historical account of the various surgical procedures resorted to in order to save the life of the mother or child when natural delivery is impossible, discussing the dangers of each, and notably of Cæsarean section. This operation, he tells us, was first resorted to in numerous cases in which it would not now be countenanced, having become unreasonably popular. Afterwards, professional opinion was greatly divided as to its merits and sphere, and even in our day unanimity has not been arrived at. The Cæsarean section may be considered as an operation of priceless value in cases in which delivery by the natural passages is impossible, but the inherent dangers are so great that it should be resorted to upon the living woman only when her interests, as well as those of the child, demand it. The life of the child is a consideration of great moment, but it should be promptly sacrificed to save that of the mother. But clear as the light of day, valid beyond all question, should be the conclusion that no safer course is known to science before one human being should take the responsibility of destroying the life of another. It is this consideration which gives to laparo-hysterotomy its chief importance. The alternative operation consists in the dismemberment of the child, which is either living at the time or has been allowed to die from delay. The statistics of this operation are worthless. All successful cases are reported; unsuccessful ones suppressed. The reports, therefore, are worse than useless, in that they mislead and becloud the truth.

Barnes, a good representative of modern midwifery, declares that "Cæsarean section occupies a doubtful place between conservative and sacrificial midwifery. It is conservative in its design, in its ambition; it is too often sacrificial in fact, being one of the most dangerous procedures known to surgery. To avoid this grave operation, Jörg, in 1806, suggested cutting through the abdominal walls by an incision extending from the spine of the pubis to the anterior spinous process of the ilium, then cutting through the vagina and delivering through the os uteri." He appears never to have performed the operation.

In 1820 Ritgen proposed the same operation, and styled it gastro-elytrotomy, adding to Jörg's procedure the important amendment of lifting instead of cutting the peritoneum.

Drs. Physic and Baudelocque, of France, also proposed the same operation. Velpeau, in 1835, alluding to Ritgen's procedure, says: "However, it exists only in theory, and no one has thus far practiced it upon the living woman." To Dr. Thomas, therefore, is due the credit of having independently conceived it, of having proved its practicability by operating upon the pregnant cadaver, and of first performing the operation successfully. Dr. Thomas records five cases; one, that of a woman in articulo-mortis (from pneumonia), where the chief object was to save the child and at the same time render the mother's closing hours free from the pain of labor; this was easily accomplished, but the child was premature and deformed, and died about the same time the mother died. Three cases of Dr. Skene, of Brooklyn; one where craniotomy had already been done, the mother surviving the operation some hours, and dying from exhaustion from her prolonged labor, and two where both mother and child were saved. Dr. Thomas' second case was also doubly successful, making a total of three mothers saved and four children delivered alive out of five cases. Comparing his operation with laparo-hysterotomy, Dr. Thomas finds that metritis, peritonitis, and incarceration of the intestines in the uterus, are entirely avoided, and the danger from shock and septicæmia very much lessened. The great danger to be apprehended is hæmorrhage. In none of the five cases reported did it occur, but there is reason to fear it. There is also danger of cellulitis, and three of

the above cases were complicated by fistulous openings in the bladder. The operation is by no means difficult, and may be performed with rapidity and certainty by any operator of ordinary skill, the operator being provided with a pocket-case of instruments, Barnes' dilators, and the thermo-cautery or ordinary cautery irons. The patient, fully anæsthetized, is placed upon a firm table and the os dilated with Barnes' dilators; an incision is then made from the anterior superior spine of one ilium to the pubis, just above and parallel to Poupart's ligament, and carried through the muscles and soft parts to the peritoneum, which, being ample and movable, must be lifted upwards and backwards. The vagina being then pushed up into the iliac opening by a sound or the finger, must be cut and the opening enlarged by tearing with the finger; the child must then be delivered by version if the head or arm present; by extraction if the breast does. Then the placenta having been delivered and the uterus caused to contract, the iliac fossa should be cleansed by a stream of warm water introduced through the abdominal wound and escaping through the vagina; and if hæmorrhage exists, ligatures should be applied through the abdominal opening, if possible, or the bleeding points touched with the actual cautery. Should this fail, both vagina and iliac fossa should be tamponed with cotton soaked in water and squeezed. A broad band of adhesive plaster and a compress complete the dressing. Should no hæmorrhage occur, the wound is closed by interrupted sutures, the vagina washed out every five hours with warm carbolized water, the nozzle of the syringe being carried through the vaginal opening, and the fluid forced out through that in the abdomen. The patient should be kept quiet, nourished by milk and animal broths, and free from pain by opium.—*Amer. Jour. of Obstet.*

Section of Nerve for Elephantiasis.—Dr. T. G. Morton tied the femoral artery for elephantiasis of the right leg in 1873 with some apparent benefit; the patient considered himself improved and thought the operation had arrested the progress of the disease. On reädmission to the hospital in 1877, the leg was found to be double the size when last seen, measuring

twenty-one inches in circumference, and the man desired amputation. "Having noticed the frequency with which operations for nerve section are followed by atrophy, Dr. Morton attempted to produce atrophy of the right lower extremity by section of the motor nerve of that limb."

On November 17, 1877, the right sciatic nerve was laid bare and one and one-half inches of its length exsected at the upper third of the thigh. Nothing unpleasant has occurred, and there has been a steady diminution in the size of the limb ever since. On January 3, 1878, it was found to be but twelve and a half inches in circumference, a reduction of eight and a half inches. The skin has become soft and pliable; it has not ulcerated, and the lost sensibility is confined to the anterior portion of the dorsum, all of the sole of the foot, and a strip about two inches wide on the back of the leg. To Dr. Morton alone is due the credit of conceiving and executing this novel and successful operation for the cure of this most troublesome and intractable affection.—*Phil. Med. Times.*

Chronic Aural Discharges.—Professor J. J. Chisolm read a paper on Chronic Aural Discharges at the Baltimore Academy of Medicine, in which he stated that the recognition of chronic otorrhœa was an opprobrium to the profession. Physicians feeling their inability to check the discharges, and in order to escape annoyance, often recommend that children be allowed to outgrow them. Dr. Chisolm stated that cleanliness alone would cure the most obstinate case, as it was the decomposed matter which excoriated the middle and outer ear. An offensive ear always meant a foul ear. Warm water and a syringe (a small bag syringe being the best) were the cleansing means, the outer ear being drawn outward, backwards, and upwards to straighten the meatus. After this the usual astringent prescription of sulph. zinc and carbolic acid āā grs. iii to water f℥i, would be found effectual. For the more chronic cases, alum powdered and mixed with powdered lycopodium, to prevent caking, is the best application. After thoroughly cleansing and drying the ear, the powdered alum is blown through a quill or from a puff-bottle into the ear. After a few daily applications he has

checked aural discharges of many years existence. One great advantage of the alum-powder treatment is that it can do no harm. Since adopting this treatment, he finds the most rebellious discharges from the drum cavity yield kindly, and that aural discharges, however chronic, are more amenable to treatment than any other class of chronic affections.— *Virginia Med. Monthly.*

The Diagnosis of Cancer of the Liver. By Professor Wm. H. Thomson, of New York. Dr. Thomson first noticed the different causes of jaundice; catarrhal jaundice, the result of taking cold, the mucous membrane of the biliary ducts becoming swollen and thus preventing the passage of bile into the intestine. The urine is tinged with bile several weeks before the yellow hue appears upon the skin; pain between the scapulæ, and extending to the shoulders; more severe in the right than in the left; loss of appetite and cough from irritation of the phrenic nerve. In jaundice caused by the stoppage of the biliary ducts by a calculus, there is acute pain in the hepatic region as a first symptom, together with chills, vomiting and eructations of wind, then discoloration of the urine, and jaundice of the surface of the body along with it. When there is a calculus, the ingestion of food, especially certain classes, as fatty or sweet articles of food, gives rise to acute pain. The jaundice in cancer of the liver is caused by pressure of the diseased mass upon the biliary ducts. Jaundice, however caused, is always followed by emaciation. The emaciation, however, in cancer is different from the simple thinning caused by cholæmia. The eyes are sunken from absorption of the cushion of fat upon which the ball rests; there is sharpening of the nose; the alæ being also shrunken, and there is thinning of the ears. Moreover, there is the peculiar facial expression due to drawing down of the corners of the mouth, which is indicative of some abdominal trouble. In abdominal explorations (to which we are led by the pain in that region by the facial expression and by the jaundice) inspection and palpation are as important as percussion and auscultation in diseases of the chest; these latter here assist us very little. On examination we at once detect a

solid tumor in the hepatic region. That it is a real protuberance, and not a local or general tympanitis, is shown by the fact that the outlines of the ribs can be distinctly seen. In a distension caused by gas, the swelling has a round and uniform outline, and the umbilicus would retain its natural appearance, or its depression be increased. If there were fluid in the peritoneum, the umbilicus would be obliterated or actually protuberant. A solid tumor may be either a uniform enlargement with a smooth surface or one with a rough and irregular outline. The sense of touch must therefore be educated to appreciate the difference between scirrhous masses, fæcal accumulations, aneurisms, etc.

We find in cancer of the liver a solid abdominal tumor presented to the sense of touch; we decide that it belongs to the liver, and not to the stomach, by observing the effect of respiration. When the patient takes a deep inspiration, the whole tumor is pressed downwards. Tumors of the stomach are not thus affected (unless attached to the diaphragm), and the same is true of abdominal aneurisms; tumors of the spleen are. There can be no enlargement of the spleen or liver unless the mass is pressed downwards with inspiration and recedes again with expiration. Tumors of the kidneys, enlarged glands, and pelvic tumors, are not affected in position by respiration. Hydatids of the liver generally affect the left lobe, and give rise to very little pain; besides they are not hard, and give to the examiner a sensation of the presence of fluid. As positive signs, we have the real emaciation and cachexia of cancer, the extreme pain, and the roughened feel of some portions of the surface of the organ.—*Med. and Surg. Reporter.*

Percussion of the Skull as an Aid in Diagnosis. By Alexander Robertson, M. D., of Glasgow. The patient, a man infected by syphilis, had epileptiform seizures recurring every two months for the period of about seven years. Latterly the attacks occurred at rather shorter intervals. The patient did not suffer from headache, but on tapping somewhat firmly with the point of the finger all over his head, he feels pain moderately severe over a circular space of two inches in diameter above the

left ear. He was not aware of any pain until his attention was directed to it by percussion. By this mode of examination, the force applied may apparently be transmitted to the membranes and surface of the brain, so as to induce pain in these parts, if in a morbid condition. Obviously, percussion will be of more service when the disease is circumscribed than when it is diffused. When no pain is felt until the part is percussed, probably the lesion does not implicate the skull and dura-mater, for when these parts are involved, particularly if syphilis is the cause, the pain is usually distinct enough, especially at night. *Brit. Med. Jour.*

NOTE.—While due credits are given in this department, every article is condensed and entirely rewritten.—ED.

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*A Case of Deafness from a singular cause, with Treatment and Results.* By T. E. MURRELL, M. D., Little Rock, Ark. [Read before the State Medical Society of Arkansas June 2, 1878, and ordered to be published.]

As one of the factors in perfect audition, an equilibrium of the air in the middle ear is important. The conducting ossicles are so delicately balanced that any increase or diminution of the intra-tympanic pressure interferes with their proper functions—an increase in pressure by resisting the delicate sound waves striking on the membrana tympani and breaking the conducting chain by slightly separating their articular surfaces; and a diminution in pressure by allowing the column of air in the external meatus to so press in the membrana tympani and chain of ossicles as to drive the foot of the stapes forcibly into the foramen ovale, and, through disturbance of the equilibrium of the labarynthine fluid, blunt the percipient power of the terminal auditory apparatus. In order to preserve this state of equal pressure between the air in the middle ear and that without, it is necessary that an interchange of air at short intervals between this part and the throat be possible. When the

secretions from a pharyngitis occlude the mouth of the Eustachian tube, hearing at once becomes quite dull in the corresponding ear. This is because the air in the middle ear is rapidly absorbed, and the resistance to the external pressure being removed, the drum membrane is pressed forcibly inwards, sometimes even coming in contact with the promontory.

By holding the nose and forcibly distending the cheeks with wind, a thud is heard in a sound ear, followed by muffled hearing, which is at once removed by the act of swallowing. Excursionists, on climbing high mountains until respiration is rapid and forcible, have experienced a slight valve-like sound in their ears during inspiration and expiration. This is not altogether due to a displacement produced by the rarefied air, for the same phenomenon is sometimes experienced after any fatiguing exercise. It is now believed that in all ears a slight interchange of air takes place between the middle ear and throat at each act of inspiration and expiration.

A gentleman consulted me last year for partial deafness. During the examination I noticed the left membrana tympani move inwards during inspiration and outwards during expiration. The excursions were quite considerable. No such peculiarity was observed in the right ear. I attributed it to two causes; undue patency of the Eustachian tube and unusual flaccidity of the drum membrane. This is the only case of the kind that I have ever witnessed, and can find no record of a like one.

In Vol. 5, No. 2, of the "Archives of Ophthalmology and Otology," Dr. Clarence J. Blake, of Boston, reports an interesting case illustrating the effect of respiration on the column of air in the Eustachian tube and middle ear. This patient exhibited the singular condition of a manometric cicatrix in the middle ear covering the mouth of the Eustachian tube. The anterior two-thirds of the membrana tympani had been washed away by purulent inflammation in childhood.

The handle of the malleus was retracted, and a thorough view of the membrane was to be obtained. On pronouncing the consonants *m*, *n*, and *ng*, the cicatrix was noticed to move decidedly, the excursions being increased by holding the nose.

During inspiration it was seen to move inwards, and outwards during expiration.

The influence was greater when breathing through the nose than through the mouth; an important observation, since hearing may be affected by obstruction of the nasal passages when the Eustachian tubes are not directly involved. This very rare and fortuitous condition sheds much light on the physiology of the ear, particularly since it fell into the hands of so astute an observer. The pronunciation of certain consonants is now utilized in inflating the middle ear. The letters *h*, *c* and *k*, pronounced rapidly, as in hick, heck, hock, are found to render the Eustachian tubes patulous by the influence their pronunciation has on the palatal and pharyngeal muscles.

By emptying the air-bag into the upper pharynx at the moment of calling these words, the air is found forcibly to enter the ears. It is probable then that not only during acts of swallowing, but also during respiration and talking, the air in the middle ear is allowed to equalize itself by communication with the throat. Hence we see the important relations existing between the function of hearing and those of respiration, deglutition, and articulation.

With this introduction on the physiology of hearing, the following case will be easily understood, both as to the cause of deafness and the rationality of the proceedings instituted for the restoration of hearing.

On February 21st, 1877, Mr. B., German, aged thirty-two years, presented himself for treatment for partial deafness in both ears. He could only hear very loud conversation addressed close to his ear. Conduction of sound through the cranial bones was perfect. Both membrana tympani were depressed, and showed numerous cicatrices from repeated paracentesis, leading to extensive attachments to the bony wall beyond, almost obliterating the tympanic cavity. The only portion of either that seemed not to be in contact with the resisting bony wall was about the anterior third, which was found to yield slightly when pressed on with a probe.

On looking into the pharynx, the uvula was not seen, nor the arches of the palate; but, instead, an apron extending directly

back to the posterior pharyngeal wall in a line with the roof of the hard palate, which was firmly united with the posterior and lateral walls all around, completely severing the upper from the middle and lower portions of the pharynx. Near the middle of this membrane, which was quite tense, thick, and resisting, was a strongly-contracted, funnel-shaped cicatrix, the apex of the funnel being turned upward towards the basilar process of the sphenoid bone.

On passing a Eustachian catheter into the pharynx through the nose and turning its point downwards, it could be felt with the finger introduced into the mouth. I endeavored to inflate the midde ear by the use of the catheter, but the parts were so altered that I could not judge by the sense of touch or by measurement when I had reached the mouth of the Eustachian tube. Every endeavor to force air into the tympanic cavity by this method failed. I then tried the air-bag with the nozzle applied to the external nares, as in Politzer's method, with like result. Just here I will give his history:

Twelve years ago he contracted syphilis. The pharynx became involved as one of the secondaries, which became very severe, leading to extensive lesions of the soft palate and pharynx. Various remedies were used on it by his attending physician, with only temporary amelioration. The diseased action continued in his throat, continually growing worse, until some years afterwards, in 1873, he went to Europe, and while at Heidelburg put himself under the care of Professor Moos. This distinguished otologist's description of the case at that time and treatment were given in a letter to Professor Knapp, of New York, which Mr. B. still retained, and which he kindly showed me.

Professor M. stated that there was *glutinous granulation* of the pharynx and soft palate, which was leading to adhesions that would in time require an operation to prevent complete closure of the pharynx. That treatment consisted of cleanliness and the use of the spray with medicated solutions. That his hearing was bad, which he restored by paracentesis of the drum membranes and inflation of the ears by Politzer's method. That catheterization he had tried and found impossible.

This was the substance of the letter. Mr. B. left Heidelburg

after a few weeks, very sanguine over the improvement of his hearing, but Professor M. warned him that the improvement would be only temporary. On his return voyage, before he reached New York, his hearing grew worse. This was owing to the closure of the openings in the drum membranes. He failed to see Professor Knapp in New York, and returned to his home in this State, where he remained until the winter of 1875–76, when he went to New York to receive treatment. By this time adhesive inflammation had completed the diaphragm dividing the pharynx, all granulations had disappeared, and he had no trouble with his throat, except from the inconvenience of inability to breathe through his nose and the effect on his hearing. He stopped in Philadelphia and consulted some specialist, whose name I am sorry I do not remember, and who declined to undertake treatment for his relief.

In New York he called on Dr. Agnew, who referred him to Dr. Weir. The latter gentleman, with the concurrence of Dr. Agnew, decided to operate. He had a hard-rubber plate made to fit the roof of the mouth, like that worn with artificial teeth, the central portion behind extending back beyond the last molars to a point midway between the natural position of the posterior edge of the soft palate and the posterior pharyngeal wall. Here was attached a canula of some material about three-eighths of an inch in diameter and half an inch long extending vertically upwards from the plate. Under an anæsthetic he made an opening in the false membrane and inserted the canula. There was considerable inflammation and œdema for a few days, but the patient shortly returned home, wearing the plate and canula, breathing comfortably through his nose, and with almost complete restoration of his hearing. He was instructed to remove the plate at night, clean, and reïnsert it in the morning. This he did successfully for three months, with continued good hearing and the very great comfort of breathing with his mouth closed. At the end of this time he failed in his endeavor to insert the canula one morning, and leaving it out a day he found the difficulty still greater, and was never able after this to introduce it. The opening gradually closed, and in doing so led to much contraction and drawing into the cicatrix of the neighboring parts.

As soon as the ability to breathe through the nose ceased, his hearing became dull, and on the completion of the cicatrization grew worse than it had ever been. Nine months later he called on me in the condition I have described.

The object of his visit was to have the plate reïnserted. I was at first disposed to undertake it, believing it would have the same effect on hearing as in the first instance. I could not satisfy myself, at this examination, that the Eustachian tubes were now pervious, and if not, the operation would be useless. So I performed paracentesis of both membrana tympani, and sent him away. At the end of two months he returned, stating that his hearing remained good about six weeks from the operation. At this visit I repeated the efforts at inflation, with failure as before. I now made a large opening in each drum membrane, and fitting the nozzle of a syringe water-tight into the external meatus of first one and then the other ear, forced the water into the middle ear, but none reached the pharynx. I came to the conclusion that, in contracting, the cicatrix had so drawn on the mouths of the Eustachian tubes as to completely close them by pressure, if not involve them directly in it. This being the case, it would prove futile to reïnsert the canula. I so expressed myself to the patient, and advised at present only repeated perforations of the drum membranes to keep up his hearing. He visited me about every two months to have this operation performed. In the latter part of last summer he went East, and I gave him a letter to Dr. Blake. Unfortunately, Dr. B. was out of the city, but he received and answered my letter. In his reply he seemed much interested in my account of the case, and asked me if I had tried Politzer's eyelets for maintaining a permanent opening in the drum membrane; on which, I stated in my letter, hinged all hope of practical and permanent hearing, in my opinion. He promised to send me some of the eyelets, but failing to receive them, I ordered them through an instrument-house in St. Louis. I wrote for Mr. B. to come up. He did so, and on March 10, 1878, I made a button-hole slit in the anterior inferior quadrant of the right membrana tympani and inserted one of them, and awaited consequences. Hearing at once rose to the easy recog-

nition of ordinary conversation. I placed a small piece of lint over the mouth of the tube to protect the mucous membrane of the middle ear from too sudden exposure. No reäction followed. On the 12th, two days later, I inserted one in the left ear, with not quite so much benefit. The adhesions I found more extensive in this ear, and the drum cavity almost obliterated. Some congestion and swelling of the drum membrane occurred in this ear, but soon subsided. On the 17th he left for his home, all irritation having subsided and his hearing remaining good.

On the 17th of April I wrote to Mr. B. to know how he was up to that time, and I copy the following from his reply, dated the 19th of April:

"Your note of 17th to hand. In reply I will say to you, so far the Politzer eyelets are doing well. I have no pain, and I think the hearing has slightly improved in the left ear."

Whether or not the eyelets will remain permanently in their present position remains to be seen. The final result of the case I hope to be able to present in some future article.

PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

Philadelphia County Medical Society.

Subcutaneous Osteotomy, Illustrated by a Case in which the Femur was sawn through the Neck; also through the Shaft.

By H. Lenox Hodge, M. D., of Philadelphia. [Read before the Philadelphia County Medical Society, January 9, 1878.]

It has long been well known that subcutaneous injuries heal readily. An extensive contusion without a wound of the skin causes comparatively little constitutional disturbance, and generally does well, even when much blood is effused. A simple fracture of bone, without any wound through the skin communicating with it, unites in due time without risk to life. A dis-

location of a joint after reduction gives rise to no violent symptoms, and only a little time is required before the function of the part is completely restored. Very different is the result in the contusion, the fracture, and the luxation, if the injury be complicated by a wound, and the air thus have communication with the seat of injury.

Advantage of these well-known facts has been taken in modern surgery. By introducing a narrow knife through the skin by a small puncture, extensive divisions of tendons, fasciæ and muscles may be made, with as little constitutional disturbance as if the parts had been torn without any wound of the skin.

FIGURE 1.

In 1853, Dr. Brainard, of Chicago, proved that in the same way operations could be done on bones, subcutaneously, by a drill. His first operations were done for the purpose of obtainng bony union in cases of ununited fracture. Afterwards Dr. Brainard, Dr. Pancoast, and Dr. Agnew extended the operation to cases of deformity, and after drilling the femur, broke it at this weakened point. In addition to a drill a chisel was used in subcutaneous operations on bone as early as 1862 by Dr. Gross. Mr. Adams, of London, has greatly improved subcutaneous operations on bone by doing away with all employment of force, and substituting a complete section of the bone at once by a saw. His first operation was done in December, 1869. The following is the history of a case in which I have twice done the operation of subcutaneous osteotomy:

Frank G., when seven years of age, had hip disease in 1874. Six months after the beginning of the disease he was received into the Children's Hospital, and a cure was obtained without the formation of any abscess. Notwithstanding every effort that could prudently be made, by extension, by splints, and by apparatus, the thigh became so drawn up as to form nearly a

right angle with the axis of the body. He could not bring the foot to the ground when he stood erect. Figure 1 represents him standing with the aid of a chair. His modes of progression were threefold; sometimes he hopped on the left foot; sometimes he made use of crutches; sometimes, by flexing the left thigh, and thus putting it in the same position as the right, he lessened his height by several inches, and was able to walk awkwardly upon both feet for short distances. Upon examination very slight motion could be detected at the hip, and union, although fibrous, was very firm.

On November 10, 1876, after consultation with my colleague, Dr. John Ashhurst, Jr., I divided the neck of the femur subcutaneously, at the Children's Hospital, after the plan of Mr. Adams, and with instruments made after his pattern. The tenotomy knife was inserted down to the bone, and the narrow saw then passed along the wound, and the neck of the femur divided at right angles to its axis. The small orifice was closed by lint soaked in tincture of benzoin, the lint being slightly inserted between the lips of the wound. The limb was brought nearly into the straight position, and extension by weight and pulley was made. No fever or constitutional symptoms followed, and the wound at once healed in all its deep portions; but a little pus formed in the superficial fascia and discharged at the wound; and once, after the external wound had healed, formed again and reöpened the puncture. This slight and superficial inflammation gave rise to no other inconvenience. The section of the bone caused no more constitutional disturbance than that from a simple fracture. Union readily took place. It was found, however, impossible to keep the limb straight; it gradually, and notwithstanding all our efforts, regained its old place at right angles to the pelvis. Believing that this resulted from the powerful contraction of the psoas magnus, and iliacus internus muscles attached to the lesser trochanter, and thus below the position of the section of the bone through the neck, on July 12th, with the same instrument, I divided the shaft of the femur, just below the lesser trochanter and at right angles to the long axis of the bone, after the manner of Mr. Gant, of London. The limb was more easily

brought into the straight position, and more readily kept in good position. The external wound was closed by collodion. There were no constitutional symptoms whatever. The boy was bright and playful. The external wound was perfectly healed in a few days, and the bone, under the treatment by extension from the time of the operation, united as readily as after a simple fracture. The result has been all that could have been desired. Figure 2 shows his present condition. The limb forms but a slight angle with the pelvis. He thus can stand firmly on both feet, and can easily sit down upon a chair. The union at both sections is firm without any motion. He has no need of crutch or cane, but can walk and run with ease. He is very active in all his movements, and in ascending stairs, notwithstanding the constant rise of step after step, he can run up the stairs. This excellent result has been attained apparently with little or no risk to life.

FIGURE 2.

In studying this case, I would direct your attention to several points of practical importance which it illustrates, and to some matters connected with it, from which conclusions may be drawn for guidance in future cases.

First, then, I ask your attention to its subcutaneous character. Although it is a complete section of the bone by a saw, and the saw-dust from the bone remains in the wound; it belongs to the subcutaneous class of operations. This has been questioned by some, but it is clearly shown, first by the character of the wound. It was small and made by a tenotomy knife at a little distance from the bone. After the withdrawal of the knife, the small saw, no wider than the knife, was inserted and carried down to the bone, and by short movements of the saw the bone was sawn through. During all the time of the sawing, the wound was filled by the shank of the saw, just as in the case of a knife in the operation of tenotomy. The teeth of the saw were entirely within the tissues, in close contact with the bone and did not protrude at the wound. Again, the wound itself behaved in the same way as in other subcutaneous wounds.

In the second operation, the wound united by primary adhesion and remained sound and well. No case of simple tenotomy could have healed better. In the first operation there was only a slight superficial inflammation, not more than often arises from a slight scratch. The cause of this inflammation was due either to the fact that the lips of the wound were kept apart by the piece of lint soaked in the tincture of benzoin, or else it was due to some constitutional irritability at the time. The better method of treating the external wound appears to be, as was done after the second operation, simply to bring the edges together, and hold them in contact with collodion, or strips of adhesive plaster.

The subcutaneous character of the operation is further shown by its freedom from constitutional disturbance. Notwithstanding there was an external wound communicating with the ends of the separated portions of bone, twice made within a few months in the same child, there was no impairment of the general health. Figure 2 shows him healthy and strong. During the whole course of treatment there was no constitutional disturbance, as shown by the pulse or by the temperature. The progress was like that of a simple, rather than that of a compound, fracture. Indeed, there was far less evidence of febrile action than after a simple fracture of the thigh. There was no swelling or infiltration of the tissues with effused blood and serum, so common in simple fractures, and no irritation from the sharp fragments of broken bone. The sawn surfaces were smooth, and therefore did not cause pain and spasmodic contractions.

The statistics of the operation, as collected by Mr. Adams, show, "that in a very few cases deep-seated suppuration occurs; but in only one of these, so far as at present known, has death resulted from pyæmia out of twenty-four recorded cases. In one other case death was accelerated by the operation, or rather by the prolonged suppuration which followed. The patient died eight months afterward with albuminuria and phthisis."*

* Transactions of the International Medical Congress, held at Philadelphia, 1876, p. 628.

Another point of importance is to consider whether the section of bone could be made by any other instrument in a better manner than by a saw. Mr. Maunder, of London, prefers to use a chisel and mallet. From my experience with the small saw, I can state that it proved to be all that one could desire in the division of the femur, either through the neck or through the shaft. If it should be necessary to divide the femur through its condyles, or the tibia near its head, then I can readily understand how there might be some difficulty in managing the saw, on account of the width of the bone, and on account of its close contact with the skin. The substitution of a chisel for a saw apparently renders the operation more tedious and difficult, and cuts the bone more irregularly. The chisel struck by a mallet is more liable than the saw to slip off the bone and injure the surrounding tissues, and thus large arteries, veins or nerves, might be wounded. The employment of one or more chisels of different sizes, as has been done, appears to increase the dangers of the operation, and to lessen its subcutaneous character.

After having made the section of the bone, what should be the *treatment?* Mr. Adams' plan is to place the limb in a Liston splint, and wait until the fourth day before making extension, and then at that time to attempt passive motion, with the hope of obtaining an artificial joint. In the case given above, extension was begun immediately after each operation, and continued for five weeks without cessation. Extension tends to prevent spasm, and thus to allay pain. It also enables you more readily to keep the limb in position. Extension allows passive motion to be made to best advantage, as it keeps the sawn extremities as far apart as possible. Early and continued extension does not interfere with bony union. In this case extension was employed after both operations, and bony union resulted each time. Contrary to Mr. Adams' method, no attempt at passive motion was made. I preferred to seek for bony union. It seemed to me certain that if the limb could be restored to a good position it would be extremely useful to the patient. On the other hand, ligamentous union, or the best artificial joint that could be obtained, might be too unsteady to be useful.

Again, the history of cases collected by Mr. Adams shows that, notwithstanding active and persistent efforts at passive movements made with the aid of anæsthetics, frequently bony union resulted, and that sometimes motion which had been obtained afterwards was gradually lost.

In cases of deformity at the hip, where should the section of the bone be made? Should it be made through the neck of the femur or through the shaft, below the lesser trochanter? In our case both operations were done. That through the neck of the femur did not relieve the deformity. The one below the lesser trochanter accomplished this object. The difference in the result may be best explained by the fact that the persistent deformity was due to the contraction of the psoas magnus and iliacus internus muscles. These muscles, being inserted into the lesser trochanter and the shaft of the femur below it, remained, after the first operation through the neck of the femur, attached to the lower portion of the bone, and kept the thigh flexed as before. When the section was made below the trochanter minor, the psoas then remained attached to the upper fragment of the bone, and did not interfere with the straightening of the thigh, as it could no longer influence the shaft of the bone. The section was made above a portion of the insertion of the iliacus internus muscle, which thus kept the thigh slightly flexed. This slight flexion is an advantage rather than a disadvantage. It gives a useful limb and yet allows the patient to sit down with greater ease than he could do with the limb perfectly straight. There is also an advantage in making the section as high up as possible. If the upper fragment be short, the angle made at the point of union is less perceptible, and the limb looks more natural, and can be used better than if the section was made lower down. In figure 2 no deformity at the site of the section is noticeable. In making the section below the lesser trochanter, the instrument should be inserted from the outer and posterior part of the thigh, and the bone divided from without inward, so as not to injure the femoral vessels and anterior crural nerve in front and to the inner side, or the great sciatic nerve behind.

In cases where the union is osseous, and the deformity depends

upon the angle at which the bones are united, and not upon the contraction of the psoas muscle, and in such cases, if the neck be of normal length, not having undergone absorption or ulceration, then Mr. Adams' operation through the neck is to be preferred. The mere rotation of the fragments upon each other will serve to remedy the deformity without any gaping or angularity of the bones at the position of section.

Each case should be studied as regards the peculiarities of its deformity, the cause which produced it, the reason of its persistency, and the present condition of the bone, in order to decide where the section had better be made. A careful study should also be made of the locality selected for the section, in order to avoid injury to any important structures.

What other operations could have been done to relieve our patient of his deformity and restore his limb to usefulness?

The adhesions at the joint might have been broken by force, under an anæsthetic, and an attempt made to straighten the limb by stretching or tearing the muscular and fibrous contractions. This plan often gives good results. Some years ago I reported a number of cases to the College of Physicians ("American Journal of Medical Sciences," April, 1867). This method sometimes is followed by more or less renewal of the old inflammation at the joint. It is, therefore, probably, more dangerous than subcutaneous osteotomy, and not so certain in its results.

Another plan is, by force to break the femur below the lesser trochanter, and then to treat the injury as a simple fracture. In the effort to break the bone, more or less violence must be done at the old seat of inflammation at the joint, with a likelihood of the return of some of the violent symptoms. The bone also can not be broken without more or less contusion of the soft tissues. The same result is accomplished by subcutaneous osteotomy, with far less violence.

In a letter received from Dr. Gross, he informs me that he believes that the operation which he has advocated, and has successfully applied to the treatment of deformities at the knee, is also applicable to the hip. He proposes, with appropriate instruments and proper care, to lift the head of the bone out of the acetabulum, by the subcutaneous method, in cases of com-

plete anchylosis. Notwithstanding the high authority of the distinguished author, I can not but think that in bony anchylosis he would, in some cases, find it impossible thus to move the bone from its socket. In cases of fibrous anchylosis he does not recommend the operation, lest some remnants of joint tissue should give rise to violent inflammation. My case belonged to this class.

The operation suggested and practiced by Dr. J. Rhea Barton, in which a section was made through the bone, between the trochanters, by a free external incision, while so successful in his case, is of a much more dangerous character than subcutaneous osteotomy, which accomplishes the same result by a subcutaneous wound.

The modification of Barton's operation, as done by Dr. Buck, at the knee, in which the whole joint is removed by excision, and the modification by Dr. Sayre, who removed a small section of the femur, between the trochanters, require free external incisions, and belong to the same dangerous class of operations, and can not, therefore, be compared in safety with subcutaneous osteotomy.

We may therefore fairly conclude that by subcutaneous osteotomy we have an efficient means by which deformities, such as existed in the case under consideration, may be removed, and the usefulness of the limb, in a large measure, restored without exposing the patient to any great risk to his life or health.—*Phil. Med. and Surg. Rep.*

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

THE ADMISSION OF WOMEN TO THE HARVARD MEDICAL SCHOOL.

CHICAGO, June 20, 1878.

Editor Boston Med. and Surg. Journal:

Dear Sir,—There can be no more objection to the two sexes being educated together than to their association together in any other social relation *until* their studies and exercises touch sub-

jects on which by common consent the proprieties demand silence. When this point is reached, for the success of the students—not for the safety of their morals—the sexes should study apart.

But it is said that physicians should meet each other on a basis of high ethics and science and forget sex. This is both true in principle and possible in practice. But students are not physicians, and time is required to develop the average young man who takes up the study of our profession to this basis. Some experience with students of both sexes has impressed the writer that the woman-student has attained this state by the time her resolution is formed to become a doctor. But the man-student, as a rule, requires time to acquire the professional feeling.

Ten years ago a trial was made of mixed classes in the Chicago Medical College. Women were admitted on the same terms as men, and several entered and attended one course of lectures. They attended all the exercises, including the clinics and dissections. They were very faithful and conscientious students, and seemed to find no difficulty in feeling that they were learners instead of simply women in the presence of a concourse of men, whenever in the lectures a topic was reached that touched the sensibilities, or they entered the dissecting room, or a patient was presented at the clinic in a plight that would shock a mixed audience of lay people. Their brothers and some members of the faculty were less fortunate. Many of these pupils found difficulty in forgetting that they were men in the presence of ladies, and not learners only, and the annoyance and embarrassment were so great, and occasionally the rudeness on the part of some male students who forgot themselves became so pronounced that at the end of the term the faculty gladly gave up the experiment.

As a consequence a college was at once organized for the education of women exclusively, and has been in successful operation ever since. It is found that here women can acquire a better education than at either of the colleges for men, the curriculum being the same or higher, and there has been no dissatisfaction with this arrangement.

But the question is a difficult one to discuss, and one on which

you are sure to be misunderstood if you oppose any demand of the woman movement. For the advocates of that movement seem unable to allow you to say that women are different from men without insisting that you mean that they are inferior.

To say that men and women should be educated in medicine separately is no disparagement to women students, nor is it opposition to the free and equal entry of women into the profession. It is simply deference to an almost universal feeling of the sexes toward each other—a feeling with which from childhood up we are indoctrinated by the civilization of our time.*

If Harvard is able to establish a woman's medical school that will give instruction of as high an order as the present school, it would probably be a good thing for the institution, and the new school would take rank at once by the side of its elder brother as the first in the land. But to make a mixed school of the one you already have would add an additional load to the heavy one she is already carrying in the interest of better education and higher requirements. The woman's movement, essentially just and correct as it is, can not afford to molest Harvard. It has most to gain by allowing the latter to work out the problem it has in hand.

NOTE.—The facts in this letter are republished because they are historically interesting, though they put on record scenes over which the most obtuse sensibilities are overwhelmingly shocked. That mixed classes should have passed through such scenes, that young women should have been encouraged in such degradation even for one hour, is surprising indeed; but that they should have been allowed to thus degrade their sex for an entire session, is certainly a very sad fact. The males or "man-students" did wrong certainly, yet who can blame them for making a difference between these females and those with whom their mothers and sisters associate. That science renders either the male or female student non-sexual for the time is a transparent sham; and it is socially unjust and physiologically untrue to assert, that when young men and young women are brought together before nude bodies, living or dead, the "woman-student" is a devotee only to science, while the "man-student" has the cravings for science subordinated by the instincts of nature. Such scenes are outrageous; and if women must become doctors, they must have their own colleges.—E. S. G.

* Why not say it is simple decency?—E. S. G.

CHEMISTRY AND PHARMACY.

"Diruit, ædificat, mutat."—Hor.

CONDUCTED BY C. W. NULL, M. D., LOUISVILLE, KY.

Dangerous Hydrargyrum Cum Creta.—When this valuable preparation is improperly made and carelessly kept exposed to light and atmosphere (as is so often the case with many of our druggists), chemical change occurs, and the red oxide of mercury is formed, rendering it a dangerous article to be dispensed. This explains the unsatisfactory experience which many physicians have had with it in their practice. If incorporated with some saccharine substance, it may be preserved against oxidation.—*Edward G. Hendricks, Ph. G., in Amer. Jour. Pharm.*

Salicylic Acid.—No single one, perhaps, of the numerous class of new remedies has gained a more universal trial and acceptance than salicylic acid. Its wonderful anti-pyretic, anti-rheumatic, and antiseptic properties have been observed by every physician. Even the virtues of a specific have been accorded it. Yet, with all its true worth, it has, in the hands of some, proved utterly worthless. We have often witnessed unmistakable proofs of its success, and equally as frequent, perhaps, have seen its failures. These discrepancies in the experience of different physicians may be attributed partly to the quality of the drug.

Mr. John Williams, in an article on salicylic acid, read before the Pharmaceutical Society of Great Britain, sets forth some very conclusive observations and chemical experiments upon this view. He notes that the only pure and reliable preparation of the acid is made from the oil of wintergreen (an American oil obtained from gaultheria procumbens), and that the market is supplied chiefly with an article manufactured from carbolic acid, which is seldom ever free from impurities.

The oil of wintergreen is composed of salicylic acid and methyl alcohol (wood spirits) in a natural combination. When treated with caustic potash in solution and distilled, this natural combination is broken up; the acid unites with the potash,

and the methyl alcohol with other volatile substances is distilled over. The salicylate of potash thus produced is readily decomposed by the addition of hydrochloric acid, the insoluble salicylic acid precipitating. It is then recrystalized and deprived of all impurities. Soluble, one drachm in three fluid ounces of boiling water. Free from smell; crystals small and white.

The artificial acid is made from carbolic acid by first combining with soda to form a neutral salt (carbolate of soda). This salt is then subjected to a temperature of 200° C., when a current of dry carbonic acid is passed through it. Half of the carbolic acid combined with the soda unites with the carbonic acid to form salicylic acid, which remains united with the soda; the rest of the carbolic acid distills off; the remaining salicylate of soda is decomposed with hydrochloric acid and crystalized as before. If potash be substituted for soda, no salicylic acid will be produced; but another allied body, named paraoxybenzoic acid, is the result. This substance is very different from salicylic acid both in chemical and therapeutical properties; is quite inert as an antiseptic.

It is well known that carbolic acid is a substance of very varying composition. It is offered in commerce at different prices, and also showing different boiling points, according to the degree of purity. The ordinary carbolic acid being a mixture of that acid and cresylic acid, and probably other bodies. It is quite natural that the salicylic acid produced from such a mixture should differ much in quality. The expense would be too great in rarefying carbolic acid to make it practical to use the purified carbolic in manufacturing salicylic acid.

The artificial and natural acids differ materially both in their physical and chemical properties. The best is free from smell, crystals small and white. One drachm of the natural acid will require about three ounces of boiling water to dissolve it. The best quality of the artificial acid requires but two ounces, and very common qualities do not require more than one and one-half ounce to dissolve them.

The Alkaloid of Duboisia Myoporoides.—At a regular meeting of the Pharmaceutical Society of Great Britain, April 3,

1878, a paper was read by Mr. A. W. Gerrard in which is given some account of his separation of the alkaloid from an extract, and of the chemical analogies between it and atropia. Having been supplied to Dr. Sydney Ringer for physiological experiments, the following is his report:

Action on the Eye.—We find that it quickly and widely dilates the pupil. Mr. Blake dropped a small quantity of a solution, 1 in 120, into an eye. In ten minutes the pupil was widely dilated.

Action on the Skin.—Mr. Blake injected one-sixtieth of a grain under the skin of a patient troubled with night sweating. The sweating was much prevented.

Effect on the Mouth.—Mr. Blake injected one-sixtieth of a grain hypodermically into two patients. The injection caused great dryness of the mouth.

Antagonism to Muscarine.—We find also that like atropia it antagonizes the action of muscaria on the heart of a frog. We exposed the heart of a brainless frog, and applied a minute quantity of extract of aminita muscaria. The heart-beats had nearly stopped in five minutes, there occurring only an occasional pulsation. We then applied a small quantity of solution of the duboisia alkaloid, one in twenty, and in half a minute the heart beat strong and naturally thirty-four per minute.

Tetanizing Property.—Like atropia this alkaloid also produces tetanus after the lapse of some hours or days. We injected one-seventieth grain, one-fifth grain, and one-seventh grain, respectively, under the skin of three frogs. Slight but distinct tetanus occurred in two in twenty-four hours.

The preceding experiments, says Mr. Gerrard, show that in its physiological action duboisia alkaloid entirely agrees with atropine, but this agreement by no means proves that alkaloid to be atropine, for most alkaloids of the order Solanaceæ have common physiological actions, and at one time were considered to be chemically identical, but now they are generally understood to be different bodies, and although it has been shown that, in the majority of its properties, this duboisia alkaloid is like atropine, I am inclined, for the following four reasons, to the conclusion that it is not atropine: 1. Its solubility in water is

twice or more than twice that of atropine. 2. It has more power in neutralizing acids than atropine. 3. Its behavior to sulphuric acid in the cold, and also when heated with bichromate of potash, differs from the behavior of atropine. 4. When boiled with baryta the odor it evolves is entirely different to that given off by atropine under the same conditions.—*Ex.*

Carbonic Acid and the Atmosphere.—Recent observations by M. Ebermayer demonstrate (1) that the air in a large forest is in summer nearly twice as rich in carbonic acid as free open air; (2) that forest ground in summer contains much less CO_2 than unwooded ground (the CO_2 formed by slow decomposition of humus in the close forest seems mostly to pass into the air, and is probably utilized by the leaves for assimilation); (3) that, with rise of temperature, the increase of CO_2 in arable ground is very much greater than in forest ground; and (4) that the spread and motion of CO_2 in the ground seems to take place very slowly; for in two places quite near together the amount of CO_2 may be very different. Among other bearings of these facts, the ground covering of a forest can have no important influence on the amount of CO_2 and lime in spring-water, and unwooded ground may have a greater action in this respect. Again, animals living underground, *e. g.* foxes, naturally prefer the ground air of the forest, with its little CO_2 to the ground air of the open field, which has much more.—*Nature.*

Vermilion is a mixture of sulphur and mercury, and is frequently found to turn to a dark-brown color if exposed to the atmosphere. A remedy for this is said to be to add one-eighth part flour of sulphur to the paint when mixing. To detect adulteration in vermilion, place a little on a red-hot iron; if pure, it will evaporate entirely; if not, there will be an earthy residue.—*Druggists' Circular.*

The Antiquity of Beer.—A recent German work on the chemistry of beer goes back, after the manner of German works on any subject, to the earliest history of the article. The author does not, indeed, prove that Adam brewed beer in the

Garden of Eden, but he does show that the use of the beverage dates from very early times. Tacitus in his "Germania" says: "Potus humor ex hordeo aut frumento, in quandam similitudinem vini corruptus;" and also that these Germans were indeed simple and moderate in their food, but less so in the use of this drink from barley or wheat. Diodorus Siculus (30 B. C.) affirms that Osiris even (1960 B. C.) introduced a beer made from malted grain into Egypt. Archilochus (720 B. C.) and Æschylus and Sophocles (400 B. C.) refer to a barley wine (vinum hordeaceum), and Herodotus (450 B. C.) relates that the Egyptians made wine from barley. The Spaniards knew beer, Pliny reports, as "celia," or "ceria," the Gauls under the name "cerevisia." In England and Flanders beer was commonly in use at the time of the birth of Christ; while old books represent Gambrinus, king of Brabant (1200 A. D.) as the inventor of beer. It is certain that beer was known to the Chinese from very early times. In the middle ages there was a celebrated brewery at Pelusium, a town on one of the mouths of the Nile.

With regard to English beer-drinking, a London medical journal says: "Authentic records show that, although we are a beer-drinking people, we do not in the reign of Queen Victoria consume one half as much beer as we did in that of Queen Anne. The average consumption of malt per head of the population was considerably more than twice as great in the middle of the eighteenth century as in that of the nineteenth. In the time of the Tudors beer was drunk at every meal; there was a steady drinking from breakfast to supper."

Adulteration of Cod-Liver Oil.—Mr. Kohn, of Norway, an authority on cod-liver oil, says, in an article contributed to the "Pharmaceutische Handlsblatt," that in Norwegian oils of the first grade there is a liability to substitution of the oil obtained from the so-called hoakjarring, "Seymnus borealis," a fish sometimes attaining the length of twelve or fifteen feet. As much as two hundred or three hundred pounds are obtained from the liver of a single specimen, and consequently there is a great deal placed upon the market. The oil is bright and free from stearine, and somewhat cheaper than cod-liver oil. It is how-

ever, very difficult of digestion, and possesses a peculiar and disagreeable odor. Its low price and good appearance sometimes attract purchasers, who, in turn, pass off the oil for the genuine article.

A River Intensely Salt.—It was very long supposed that the brackishness of Salt River, Arizona, was caused by the stream running over a bed of salt somewhere along its course. Its waters are pure and fresh from where it heads in the White Mountains to within fifty miles of where it empties into the Gila. Fifty miles from its junction with the Gila there comes into it a stream of water that is intensely salt. This stream pours out of the side of a large mountain, and is from twenty to thirty feet deep. It is very rapid, and pours into the Salt River a great volume of water. Here could be easily manufactured sufficient salt to supply the world. All that would be necessary would be to dig ditches and lead the brine to basins in the nearest deserts. The heat of the sun would make the salt. Were there a railroad near the stream, its waters would doubtless soon be turned and led to immense evaporating ponds. It is supposed that the interior of the mountain out of which the streams flow is largely composed of rock salt.—*Nevada Enterprise.*

Adulteration of Cream of Tartar.—Dr. Squibb, of Brooklyn, at a recent society meeting, gave some interesting statistics as to his experiments on the purity of this drug, in which he had found samples as offered for sale to vary from 10 to 92 per cent., of pure cream tartar, the adulterations consisting of tartrate of lime and terra alba. He also told how one could go to stores in New York, where he would be taken into a room in which a sample table is set with different grades of terra alba. One, you are told, will make a beautiful, bright cream tartar, another a dull one, and so on, from one end of the table to the other, each having a particular use.—*Med. and Surg. Rep.*

Freezing Compound.—Mix 9 parts phosphate of soda, 6 parts nitrate of ammonia, and 4 parts dilute nitric acid. This is a compound which will cause a fall in temperature of 71° F.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

A Guide to Therapeutics and Materia Medica. By ROBERT FARQUHARSON, M. D., Edin.; F. R. C. P., Lond. Enlarged and adapted to the United States Pharmacopœia, by FRANK WOODBURY, M. D. Cloth; pp. 410. Philadelphia: Henry C. Lea. 1878.

This is a neatly-printed and handsomely-bound volume. It is a well arranged and an ingeniously classified condensation of all that is practical and useful in a hand-book of therapeutics and materia medica. In many respects it is superior as a text-book for the medical student. The busy practitioner will also find it a valuable acquisition to his library. In it he has the material placed in a clear, simple, and attractive style to refresh his mind and brighten his ideas as they grow rusty in the push and fatigue of professional occupation. As a reference book it will also meet his wants.

Botanical details and pharmaceutical rules have been wisely omitted, though sufficient attention has been given to the most practical of these matters. The work was originally intended only as a hand-book on therapeutics, but its value and usefulness have been greatly enhanced by the additions which the American editor has appropriately made.

He has given all the officinal preparations of the United States Pharmacopœia, their doses and strength, with sufficient details to render them valuable and interesting. In the outset there is laid down a full and complete set of rules to guide one in the construction of prescriptions; for such combinations of drugs as to get their best therapeutic effects; forms of administration; proper time for exhibition; dosage; intervals between doses; idiosyncrasies; habit; constitutional or toxic effects from small doses; chemical and physiological incompatibles; prescribing for children, etc. These different topics are treated in a brief and clear style. Under the last heading the author notices the peculiar differences in the proportionate doses of certain medicines for children, their wonderful tolerance of belladonna, arsenic, strychnia, cathartics, bromides, etc. Children

of from three to ten years of age will not only bear a full adult dose of belladonna, but will require even larger doses to get the therapeutic effects.

Tables of weights and measures are given full and complete. The remarks on certain classes of medicines are very appropriate, as on antidotes, acids, anthelmintics, anti-pyretics, refrigerants, antiseptics, disinfectants, diuretics, emetics, emmenagogues, ecbolics, expectorants, purgatives, etc.

The different medicines comprised in the United States Pharmacopœia are next taken up in alphabetical order. Each drug is treated of in a remarkably easy and original manner. First, the officinal and commercial names are given, the different preparations and their doses, together with their chemical and physiological antidotes. Special attention is given to physiological action, and in this fact rests much of the superior value of the book.

One of the most attractive features of the book is the physiological action and therapeutic use in parallel columns on the same page. This arrangement is wholly new and original with the author. It makes both the action and use of medicines plainer and more impressive to the student.

Many of the new remedies not yet officinal, but in frequent and universal use, are described, as eucalyptus, goa powder, dialyzed iron, pepsin, salicylic acid, etc.

A very excellent list of questions is appended; also a complete index of diseases, in which can be found the different remedies used in any particular disease. A general index, which is very full and complete, gives increased value to this valuable volume. C. W. N.

NOTE.—By an oversight this review has been printed in both Journals. As the work is, however, a very superior one, this double issue will, no doubt, benefit the Profession. ED.

The Functions of the Anal Sphincters, so called. By James R. Chadwick, M. D., of Boston. Reprint from Vol. II Gynæcological Transactions. 1877.

An able article. The views of the author may be thus summarized: "1. In the first place the name (rectum) given by anatomists to this portion of the alimentary canal has led surgeons to suppose that a straight bougie ought not to meet any

natural obstruction to its introduction. Plate I, however, shows that the end of any straight body would almost inevitably be caught by the posterior half of the superior detrusor. This obstacle I have repeatedly met during the past two years, and erroneously supposed to be the projecting promontory of the sacrum. For over two years I have been in the habit of dilating the portions of the rectum above this point by the inflation of a bag tied over the end of a silver male catheter, of which the curve has been considerably but not fully straightened. If, by rotation of the instrument, the curve be directed forwards, when it is passed through the perineum, backwards through the *ampoule rectale,* forwards again through the superior detrusor, and again backwards into the next segment of the rectum, the obstructions met by a straight tube have been invariably avoided.

"2. As the anterior half of the superior detrusor is just below the level of the bottom of Douglas' pouch, it seems probable that the point at which intra-peritoneal abscesses are most likely to perforate the rectum is just above the constricting fold.

"3. As the superior detrusor is shown to be forced down into the canal below during defecation by the action of the abdominal muscles, the suggestion presents itself that this part of the rectum is the one which first emerges in cases of prolapse of the rectum. I have, however, had no opportunity of verifying this fact."

Medicine, the Present and Future. An address delivered to the Graduates of the Evansville Medical College, February 27, 1878. By J. W. Compton, M. D., Professor of Materia Medica and Therapeutics in Evansville Medical College. Reprinted from the St. Louis Medical and Surgical Journal, June, 1878. One of the author's best efforts.

Thirteenth Annual Announcement of the Medical College of Evansville, Ind. Session of 1878–79.

A New Treatment for Spine Diseases. By Meigs Case, M. D., Oneonta, N. Y. Reprint from the Cincinnati Lancet and Observer, May, 1878.

Relative to Notices of Diseases which Endanger the Public Health; Duties of Householders, Physicians, and Others. Circular to Supervisors and other Officers of Townships, from the State Board of Health of Michigan.

Second Annual Report of the State Board of Health of the State of Wisconsin, for the year ending December 31, 1877. Madison, Wis.: David Atwood. 1878.

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Relative to the Work of Health Officers and of Local Boards of Health in Michigan. Circular No. 28, from the State Board of Health of Michigan.

Newspaper Advertising. One hundred and fifteenth edition. New York: Geo. P. Rowell & Co's. Newspaper Advertising Bureau, 10 Spruce street.

Nature's Noblest Remedy, endorsed by the Medical Profession. A representative record of results attending the use of the Bedford Alum and Iron Springs Water, Mass and Essence, for the last twenty-five years. "By its fruits ye shall judge it." By the Bedford and Iron Springs Company, Lynchburg, Va.

Message to the Medical Association of Alabama at its Annual Session at Eufaula, April 9, 1878. By Peter Bryce, M. D., President of the Association, and Superintendent Insane Hospital at Tuscaloosa. Extracted from the Transactions. Montgomery, Ala.: Barrett & Brown. 1878.

Salicylic Acid. By Wirt Johnston, M. D., Jackson, Miss. Reprint from the Eleventh Volume of Transactions of the Mississippi State Medical Association. An enthusiastic claim for the value of this acid.

Chronic Granular Conjunctivitis. By T. E. Murrell, M. D., Little Rock, Ark. Louisville: Richmond and Louisville Med. Jour. Book and Job Steam Printing House. 1878.

MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

The So-called Myxoma of the Placenta.—In a paper in a recent number of "Virchow's Archiv," Dr. Storch, of Copenhagen, reviewing at some length the pathology of the condition which has been termed myxoma of the placenta, arrives at the following conclusions: He maintains that very different forms of disease of the ovum are included under the name, some of which are essentially different, and have been hitherto wrongly described. The condition which has been termed myxoma fibrosum placentæ is a cellular hyperplasia of the bases of the villi which consist of mucoid tissue, and proceed from the allantois. The disease occurs only during the later months of pregnancy, and is limited by the ramification of a single villous trunk, although there are indications by a widely-spread change of a similar character in the otherwise healthy portions of the affected placenta. The so-called simple hypertrophy of the villi of abortions during the early months of pregnancy represents an early stage of the same condition. It is commonly accompanied by an hypertrophy and inflammatory thickening of the decidua, which makes it probable that the morbid condition arises from the irritation of a diseased lining membrane of the uterus. The fœtus is commonly well-developed.

The so-called hydatid disease and its varieties, which so frequently occur in abortions, are due to a hyperplasia and secondary cystoid degeneration of the connective tissue of the chorion, not proceeding from the allantois. The disease is often accompanied by pathological conditions of the remaining parts of the ovum, amnion, and embryo (malformation and early death). Less commonly the embryo is normally developed, but dies early on account of imperfect vascularization of the chorion-placenta. Very rarely the embryo appears to have been developed, without impediment, to the time of birth.

The peripheral parts of the ovum, chorion, and amnion may develop independently of the existence or non-existence of an embryo. The portion of the placenta proceeding from the

chorion is well developed, but there appears to be only an imperfect formation of the maternal part of the placenta. The disease must begin very early, before the allantois and chorion are united, perhaps even before the ovum reaches the uterus. How far the hyperplasia with cystoid degeneration of the chorion, in otherwise healthy ova, may be partial, can not be decided from published facts, since, in many of the latter, this condition may have been confounded with partial œdema of the placenta, or with twin pregnancies, in which a mole has developed by the side of a normal ovum.—*London Lancet.*

Use of Thymol as an Antiseptic.—Dr. H. Ranke, of Halle, in an article in Volkmann's "Sammlung Klinischer Vorträge," says that thymol was first used by Paquet, of Lille, as an antiseptic in foul, suppurating sores, and (by inhalation) in pulmonary gangrene, with good effect. Experiments have shown that its poisonous power on the organism is only one-tenth that of carbolic acid, and may practically be left out of account. Dr. Ranke uses the following solution: Thymol, 1 part; alcohol, 10 parts; glycerine, 20 parts; water, 1,000 parts. This solution does not act on the instruments, nor the spray on the respiratory organs; it produces some burning of the skin at first, but no anæsthesia. A useful dressing is made of 1,000 parts of gauze, 500 of spermaceti, 50 of resin, and 16 of thymol. This gauze remains constantly moist, and is not irritating. If the dressing be covered with gutta percha, the smell of thymol is still perceived at the end of eight days. Dr. Ranke has used the thymol dressing in fifty-nine cases, with excellent results. Among them were four cases of amputation of the breast, with clearing of the axilla, and three cases of extirpation of tumors from the breast. He says that under the action of thymol healing takes place sooner, the discharge from the wound is less, and the cost is less, than with carbolic acid. Dr. Fritsch ("Centralblatt für Gynäkologie," No. 6) believes that thymol is also of great value in obstetric practice. It removes the smell from the hands in cases of putrid abortion, carcinoma uteri, etc., more quickly than any other agent, and produces no irritation. There must always be some hesitation in entrusting

midwives with carbolic acid; but thymol may be safely given to them without fear of unpleasant consequences. The solution above mentioned is likely to be specially useful for permanent irrigation, for the dressing of chronic suppurating exudations, for washing out abscess cavities in the female genitals and in the breast, and for injections into the uterus.

Treatment of Croupous Pneumonia by Cold.—In a paper read before a medical society in Sweden, Dr. P. A. Lewin recommends the local application of cold in croupous pneumonia. He published a memoir on the subject in the "Hygiea" in 1862. Among the numerous advantages of the plan, he signalizes the immediate cessation of the oppression and shortness of breath, which may become aggravated under the internal use of antipyretics. The most suitable way of applying cold is, according to the author, the following: A small, and preferably a tórn, soft handkerchief is dipped in water at a temperature of 8 to 12 R. (50 to 59 Fahr.), and is then squeezed (not wrung) until the water no longer runs from it when held up; it is then folded up six-fold and laid on the front of the chest, a coarser handkerchief being placed below it to prevent the water from running over the body. The application is removed at intervals varying from eight to twelve or twenty minutes. Water of a lower temperature than that above mentioned must not be used; the handkerchief must be changed or entirely removed whenever a rigor is felt, and not reäpplied until the rise in temperature demands it. This method of applying cold renders unnecessary the use of general baths in pneumonia.—*Allgemeine Medizin. Central-Zeitung.*

The use of Thymol in Surgery.—The employment of thymol as a substitute for carbolic acid in surgical dressings is a natural consequence of the discovery of its greater antiseptic and less septic power. A lecture on the subject has been published in Volkmann's series by H. Ranke, of Halle. The solution used instead of the three per cent. solution of carbolic acid consists of one part thymol, ten parts of alcohol, twenty of glycerine, and a thousand of water, and can be employed as either

a spray or a solution. An impregnated gauze is also used. Since thymol does not irritate the wounds, the gauze may be laid directly upon it; otherwise the same method is employed as in Lister's plan. If the gauze becomes hard and dry it may be moistened once or twice a day with thymol water. In order to prevent the evaporation of the thymol from the dressing, the gauze is covered with oiled paper. From an experience of forty-one wounds dressed with thymol, the lecturer concluded that the method leaves nothing to be desired as to its antiseptic effect, and that it answers better than the carbolic-acid dressing, since the secretion from the wounds is less, the period of healing shorter, and the cost of the dressings is smaller. Further, it has no poisonous properties, and eczema was never observed in its use.—*Lancet.*

The Gums in Lead-Poisoning.—It will be remembered that a few years ago Dr. Hilton Fagge described, in an interesting paper, the microscopical characters of the lead line on the gums, and its dependence on the deposit of black pigment in and around the capillary loops. The same facts were described, almost at the same time, by M. Cras in the "Archives de Médicine Navale" (February, 1875, and May, 1876), and further observations by him were submitted recently to the Société de Chirurgie. He has examined the line in portions excised from the gums of many patients, and found that it was easy to demonstrate the presence of lead in all the capillaries by the action of chromic acid.—*Lancet.*

Liebig's Extract of Meat.—The important establishment upon the River Uraguay, now of world-wide renown, for making the "extractum carnis," and the general conversion of cattle and sheep, with their skins and offal, into money, produces items of increasing consequence in the list of exportations, as, for instance, the Liebig's Extractum Carnis Works at Fray Bentos, have exported in the twelve months of 1876, 16,500 tons of animal produce, representing a value of upwards of $2,000,000, shipped in thirty-five vessels, and another establishment, on more or less the same principle, belonging to Don Incas Her-

rera, has shipped to the value of $470,000. There are other works also in the same line, but I have not been able to obtain a report of their exports.

Another application of meat, smoked, and made into what is called "charque dulce," has been tried this year, and has been shipped in small quantities for the west coast; the success and value of the experiment, I believe, is not yet decided. Thus preserved produce, in its various forms, is taking a prominent place in the list of exports, and is likely to increase in quantity. *Consul Monroe, Montevideo.*

Formic Acid, its Origin and Uses.—This acid is said to be a very potent antiseptic, far surpassing carbolic acid. It is also used as a counter-irritant.

Ordinary formic acid is made by heating together to 110° C. equal parts of dry oxalic acid and glycerine until no carbolic acid is evolved. The pure concentrated acid is obtained by decomposing the formate of lead by sulphuretted hydrogen, and might contain lead.

A singular source of it has lately been brought to notice. A chemical examination of the dead Rocky Mountain locusts, by the United States Entomological Commission, shows that these insects furnish a new oil, which will be christened caloptine, and a very large percentage of pure formic acid. Though this acid exists in the ant and some other insects, it is with difficulty obtained in large quantities; whereas by the action of sulphuric acid upon the locust juices, it passes off with great readiness, and in remarkable quantity and gravity.—*Med. and Surg. Rep.*

Tolerance of Opium by an Infant.—Dr. J. L. Little reports ("American Journal of Obstetrics," April, 1878,) a case where paregoric in small doses was administered to a child three weeks old for the relief of suffering caused by inflammation of the knee-joint. The child gradually bore larger and larger doses; the paregoric was changed to tincture of opium, and this again to Magendie's solution. Soon the child obtained such a tolerance of this drug that in a couple of months from half a drachm to a drachm a day was necessary to quiet it. This state of

things continued until the amount consumed by the child, then less than eight months old, was two ounces of Magendie's solution in twenty-four hours. The dose was gradually diminished at the rate of about three drops per day, and at the time of making the report but ten drops were given at bedtime. The child's appearance improved very much; it was intelligent, and weighed eighteen pounds.—*Brit. Med. Jour.*

Absorption of Iodide of Potassium by the Vaginal Mucous Membrane.—J. Smolski ("Petersburg Med. Wochenschrift") finds that iodide of potassium is very rapidly absorbed by the mucous membrane of the vagina when introduced in large doses in the form of globules with cacao butter. In twelve hours, of twenty grains eighteen were absorbed; on the other hand only two grains and a half out of ten were absorbed. The absorption of a solution in glycerine is slower. Of a solution of twenty grains in about two drachms of glycerine only two grains and a half were absorbed in twelve hours; and of a ten-grain solution only one grain and a half in the same time. The rapidity of absorption may be increased by the addition of free iodine.—*Centralblatt f. Gynacologie.*

The Rise of Ovariotomy in France.—In his recent review of the life of M. Nélaton, M. Béclard refers to the part played by that surgeon in the introduction of the operation of ovariotomy into France. He states that Nélaton, who rarely took part in any debates, had spoken against the operation in a discussion at the Academy of Medicine in 1856—an operation which too readily ran counter to received ideas of the gravity of penetrating wounds of the peritoneum to be adopted without opposition, especially as the few attempts made in France after its introduction from England in 1840 had been unsuccessful, and as in England itself many eminent surgeons condemned it. The repeated successes of Spencer Wells and Baker Brown had, however, again turned the eyes of continental surgeons to the operation, and towards the close of the year 1861 Nélaton repaired to England to see what he could of the operation. "Five operations performed in his presence by Mr. Baker Brown

removed all his scruples; he returned convinced." In his next clinical lecture he urged his auditory to get rid of exaggerated fears, and only to judge of the operation after having tried it. Soon after he related at the Academy a case of ovariotomy which had been performed by Demarquay under his advice, but insisted that the failure that occurred in this case should not discourage further attempts. Then came the series of successful results by M. Kœberlé, of Strasburg, and ovariotomy took its place definitely in French surgery. This result was largely owing to the advocacy of Nélaton.—*Lancet.*

Chorea in Old People.—M. Charcot ("Progrès Médical,") says the chorea of old people does not differ from the ordinary form; it is rare; he has at present only two cases, and only three have been recorded by Roger, Sée, and Graves. It presents no modification except, perhaps, relative slowness of the movements, and very chronic course; in the two cases quoted it had existed eleven and twelve years respectively. It is incurable, but does not appear to endanger life. He has seen one patient, however, die in a typhoid state, with considerable elevation of temperature; another case terminated in maniacal delirium, with elevation of temperature. Most of the cases have decidedly appeared to be in a more or less pronounced state of dementia. As to its etiology, it does not seem to be allied to rheumatism; in the necropsies made, no cardiac lesions were found. It appears to be an emotional disease, and in several cases supervened after some special cause of grief or agitation. This disease differs essentially from senile trembling, which has been sometimes called senile chorea.—*London Med. Record.*

Supra-Pubic Lithotomy.—C. W. Dulles, M. D., publishes in the "American Journal of Med. Science," April, 1878, all the cases of supra-pubic lithotomy which he has been able to collect during the last ten years. They number twenty cases with two deaths. Mortality, one in ten. The Doctor claims that the dangers to be met and avoided are far less in this operation than they are in lateral perineal lithotomy.

Habitual Drunkards.—In a statement appended to the suggestions, Dr. Moore says that, in 1876, 2,900 individuals were committed to the County Antrim jail; there being 5,196 committals. Of these committals, 4,138 were for drunkenness and for crimes arising out of drunkenness. He also gives a table, showing that, previous to January 1, 1876, 162 women and 66 men had been committed twenty times and upwards—the number of convictions in the case of the women amounting to 8,411, and in that of the men to 2,336. Among the women, 15 had been each committed above 100 times (100 to 226); while one man had been committed 131 times. He estimates the yearly loss of wages through committals for drunkenness (to the Antrim jail) at about £15,000; and the expense of maintenance in prison at £7,000. The money earned by prison labor last year was £926.—*Brit. Med. Jour.*

Detection of Arsenic in Aniline Colors.—The simplest method is to put 1½ grain of the color in a narrow test-tube, pour upon it about 150 grains of pure muriatic acid, shake till dissolved, and steep in it then a narrow slip of sheet-copper, bright, clean, and especially free from grease. The tube is then placed for half an hour in boiling water, the liquid is poured off, and the metal rinsed with distilled water. If no arsenic is present, the surface of the copper remains unchanged, but if present, a blackish-gray stain of arseniuret of copper is formed on its surface.

The following process is more certain: From 1½ to 4 grains of the color in question are placed in a porcelain capsule and covered with 25 to 30 times the weight of pure dilute sulphuric acid. A little solution of sulphite of soda is added, and the mixture stirred and warmed till the smell of sulphurous acid has disappeared. Hereupon the residue is dissolved in a little pure dilute muriatic acid, the mixture introduced into a very small flask, adding a bit of paraffine wax of the size of a pea to prevent frothing. The flask is then fitted up with a tube bent twice at right angles, the outer and longer leg of which dips into a receiver containing good sulphuretted hydrogen water, and heat is applied to the flask so that the greater part of its

contents may distil over. If the sample contained arsenic it passes over as chloride of arsenic, and produces a yellow coloration, and ultimately a yellow precipitate.—*Boston Journal of Chemistry.*

MEDICAL NEWS.

'Nulla dies sine linea."

The forty-sixth annual meeting of the British Medical Association will be held at Bath on Tuesday, Wednesday, Thursday, and Friday, August 6th, 7th, 8th, and 9th, 1878.———*Medical Experts as Witnesses in Courts of Justice.*—The late Lord Campbell ruled that an expert, who can give only evidence of *opinion*, should not be subpœnaed, and was not bound to obey a subpœna. If, however, he can testify to any *fact* in the case, he must obey the legal mandate. The safe course for an expert is, however, to obey a subpœna under all circumstances. Then arises the question of fees. Mr. Ledergerber remarks that the German and French courts award to all experts suitable compensation. This is not the case in England and the United States. Unless an arrangement be made on receiving the subpœna, there is usually great difficulty in procuring reasonable compensation, especially in criminal cases. On these occasions, an expert who can testify to *facts* must obey a subpœna, be sworn, and give the necessary evidence. If, however, he have been summoned only for evidence of *opinion*, he may decline to be sworn or to give this evidence until he has received his proper fees, or a guarantee for their payment; and, as a rule, our courts will uphold this conduct on his part. It would seem that the practice in the American courts is similar. Thus, Mr. Ledergerber tells us, that Dr. Dills and Dr. Buchanan, of Fort Wayne, Indiana, were on one occasion fined for refusing to give their professional *opinion* in a criminal case, in Allen county, without having been first paid or promised due compensation. They appealed, and the Supreme Court sustained their objection, and reversed the decision of the lower courts. It would,

indeed, be a gross piece of injustice to force men, eminent in any department of medicine or science, to give their professional opinions without receiving proper compensation.—*British Med. Jour.*——Dr. F. T. Roberts, author of the popular Hand-book of Medicine, and Assistant Physician at the University College Hospital, has been nominated Professor of Materia Medica and Therapeutics in University College, London, Eng.——According to Professor Hedenius, of Upsala, there is a remarkable peculiarity in Sweden in regard to the distribution of the forms of tapeworm. In the south of Sweden, the *tænia solium* prevails; while in Nortland and Upland the *bothriocephalus latus* is most frequently met with. The specimens of tapeworm in the anatomical and pathological museum at Upsala, obtained from the town and neighborhood, are almost exclusively bothriocephali. Dr. Hedenius has found the *tænia mediocanellata* only once in Upsala.—*Brit. Med. Jour.*———*The Woman's Movement.*—It has been announced that the University of London would admit women to graduate in all the faculties. Mr. Talfourd Ely, Secretary, writes from University College, Gower street, June 18th: "To prevent misunderstanding, I shall feel obliged if you will inform your readers that the admission of women to classes in this college does not apply to the Faculty of Medicine, but only to the Faculty of Arts and Laws and of Science.—*Brit. Med. Jour.*———Since the return of M. Alphonse Guérin to Paris, this eminent surgeon has delivered, at the Académie de Médicine, an address on the treatment of wounds, which has produced a marked impression. M. Guérin has, it is well known, long practiced an antiseptic method of dressing, which consists in careful and minute cleansing of wounds by a stream of carbolized water (with a strong solution of twenty per cent. of carbolic acid), and their subsequent envelopment in thick masses of fresh cotton-wool; this acts as a filter, excluding septic germs. The method, which precisely accords in plan with Pasteur's first experience and Tyndall's subsequent verifications, gives admirable results, of which he gives details. M. Guérin gives his impressions of the Listerian method, which have been agreeably modified by his personal inspection of them, and renders full justice to the method which

carries out in perfection the antiseptic principle. He refers also to the good results of Mr. Callender with simple carbolic dressings, applied with great care as to isolation of dressings, absolute cleanliness, and attention to the details of the patient's condition. The answer to the objections to the antiseptic principle in surgery is very complete; and, indeed, so thoroughly has the opposition to this method broken down in France, that we may necessarily expect to see a rapid development of Listerism in the French hospitals, and a corresponding decrease in the mortality from pyæmia, abscess, erysipelas, etc., which till lately offered so habitually shocking a spectacle to the surgical visitors to those hospitals.—*Ibid.*——Before, however, the French hospitals are restored to a level with the hospitals of England, Germany, and America in this capital particular, a great reformation must be made in the system of nursing and dressing. Skilled nursing is rather the exception than the rule, according to common experience in the French hospitals. The nursing Sisters are very ill-trained, or not at all; they are too long absent from the wards; they are too much occupied with religious observances, administrative work, etc. The dirt and neglect of the patients visible in almost every French hospital which we have visited are such as would make the hair stand on end of cleanly, well-trained, and attentive English nurses. The dressing, too, is much neglected. It is performed irregularly, without due regard to cleanliness, punctuality, and system, and too often with insufficient regard for the comfort of the patient. The inspection of French hospitals, surgical and medical, has often given us a heartache, from the spectacle of the unjustifiable neglect of the patients by the nurse, the badness of the dressings, and the unnecessary sufferings inflicted from these causes and from the want of a proper supply of hospital appliances.—*Ibid.*——*Cholécystotomy in Dropsy of the Gall-Bladder.*—Apropos of Dr. Marion Sim's case of cholécystotomy for dropsy of the gall-bladder, published in the Journal of June 8th,* Mr. George Brown, of Colebrooke Row,

* And in this number of the Richmond and Louisville Medical Journal. E. S. G.

writes to say that, in January last, he operated in a somewhat similar case; and that the patient, a female, has so far recovered as to be able to walk out and to attend to her household duties. Mr. Brown has promised us further details of the case for publication in an early number.—*Ibid.*——*The Contagiousness of Diphtheria.*—The Massachusetts Board of Health has been studying this subject in connection with recent outbreaks in the State. Dr. Bowditch, in the course of a recent discussion reported in the "Boston Medical Journal," stated that he could not speak for the State Board of Health; but for himself he had formed decided opinions, especially since studying an epidemic of diphtheria during the past summer at a town adjacent to Vergennes, Vermont. He felt that the course of that epidemic went strongly to support the following views: 1. Diphtheria is *contagious;* numerous instances seem to be accounted for only on that idea. 2. That it is *infectious;* seems strongly indicated by the fate of one family, all the members of which, except the father, were kept away from the sick persons and houses in which they were lying. The family took every precaution, and seemed for a time successful, when their neighbors were fatally attacked. The father, however, as a neighborly act, laid out one dead body and attended some funerals, returning home every night. After the disease had apparently subsided, his three children and wife were suddenly seized. The wife was paralyzed about the palate, and the children died. 3. Filth appeared to have its effect in making the disease more virulent and destructive.—*Ibid.*———*The Emperor of Germany.*—The physicians attending the Emperor William, says the "British Medical Journal,'" have this week issued the following statement: "The undersigned consider themselves under an obligation to make the following declaration, as a complement to the bulletins issued by them, respecting the health of the Emperor-King, with a view to counteract various evasive and inaccurate versions of His Majesty's condition. By the merciful help of God, the course taken by the wounds and the entire illness which His Majesty has suffered through this most deplorable occurrence have been satisfactory almost beyond expectation. The various stages of the illness were noted in the bulletins which have

been published. From this, it is by many hopefully and joyfully inferred that His Majesty will very shortly be completely restored to health. In present circumstances, the fulfillment of this hope is certainly the desire which animates the hearts of all. But, besides passing moments of pain, His Majesty suffers much from helplessness through being unable to use either arm; and his complete recovery can only be effected after a long time, during which many obstacles may have to be encountered, which, with God's help, we hope may be overcome as happily as those that preceded them, but can not fail to inflict much pain upon the august patient.—DR. LAUER, DR. LANGENBECK, DR. WILMS."——*The Sanitary State of Constantinople.*—A recent number of the journal "La Turquie" gives a deplorable account of the sanitary state of Constantinople. It avers that the condition of the city as to unwholesomeness, instead of having become ameliorated since the termination of the war, has gone from bad to worse. Typhoid fever, exanthematic typhus, small-pox, and other epidemic maladies, which hitherto have principally prevailed in the districts to which the refugees from the seat of war have flocked, are now spreading in an alarming manner to other quarters of the city and suburbs. The regulations for the burial of the dead are imperfectly observed, and corpses are interred in shallow graves and barely covered over with earth. It is stated that it has become almost impossible on this account to live in the vicinity of the cemetery of Edirné-Capou, so laden is the air with the effluvium of the putrefying corpses insufficiently buried there. The sea-shore and the shores of the Bosphorus are piled up with filth, and the smaller streets are almost impassable from accumulated refuse and carrion. The sickening odor given off by the astounding masses of filth, especially in some of the villages on the Bosphorus, is overpowering. The effects of the first heats of summer on the seething corruption in the streets of the city and suburbs, by intensifying the effluvia which arises from it, have been such as to occasion general alarm, and the representatives of the several European powers at the Porte have been urging upon the authorities the necessity of adopting some exceptional measures of cleansing if Constantinople is to be saved from becoming a

veritable pest-focus.—*Lancet.*———*Trichinous Hams.*—Professor Richard Heschel, of Vienna, states that an examination of American hams recently imported into that city has disclosed the fact that a large proportion are infested with trichinæ.—*Ibid.*——*"Dourine" of the Horse.*—St. Syr, of the Veterinary School of Lyons, calls attention to a venereal affection of the horse of which too little notice has hitherto been taken by human pathologists. It is termed "Dourine" in France, and "Beschälkrankheit" in Germamy. It was first described by von Ammon at Posen in 1796, and has since been frequently observed; and recently, as in 1850, a paper has been written upon it by Maresch and Röll, and in 1867 another by Pillwax and Maresch. The disease consists in swelling, œdema, heat, pain, itching, congestion, and increase of secretion of the mucous membrane of the vagina. Sometimes, also, a plaque-like, exanthematous eruption occurs, with dysuria, in the mare; and in the stallion the symptoms are swelling, heat, pain, œdema, and flaccidity of the penis, with slight urethritis and dysuria, though the two latter symptoms are less constant than in the mare. A polymorphous exanthem sometimes appears on the penis and scrotum. The animals get thin and pass into the second stage of the disease. Whilst the local symptoms diminish the impairment of nutrition becomes more marked; the muscles, especially those of the posterior extremity of the body, attenuate and tremble; the animal limps; the joints swell, though the swelling sometimes soon disappears, and paresis or paraplegia of the lower extremity occurs. Sometimes rounded tumors (? œdema) show themselves at various points beneath the skin, not painful, and disappearing in a week or a fortnight. In the third stage abscesses form, with sores, ozæna, and enlargement of glands. The disorders of nutrition progress, and the animal dies from exhaustion or from hypostatic pneumonia. The disease may either be acute or may last for two years.—*Ibid.*———*The Father of the "Non-Restraint" System in England.*—To Mr. Gardner Hill, whose death was recorded in our issue of June 8, must be assigned the dignity of father of the non-restraint system of treating lunacy in England. Dr. Charlesworth, to whom the credit of first abolishing restraint has been given, rather

permitted than conducted the practice carried out by Mr. Gardner Hill at the Lincoln Asylum. This is apparent on the face of the asylum reports. The honor due to Mr. Gardner Hill's memory should not be reduced by mistake.—*Ibid.*

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

Louisville City Hospital.—The Louisville City Hospital is being subjected to temporary injury from the indiscreetness of those in authority. Among the many indiscreet pieces of legislation in regard to the veriest trifles, it is said that, as a new rule, one of the visiting staff can not give a direct order to a subordinate nurse, but that the order must be given to the head nurse, and extended by her. The medical officer can give an order to a convalescent in bed, but not to a convalescent out of bed (a nurse)!! The convalescent acting as nurse can be ordered by a subordinate, the head-nurse of the ward, but not by her superior, the medical staff officer!! It is only necessary to state these absurdities to expose them thoroughly; nothing more is needed. If one went into a military establishment and found that a corporal could give an order which the lieutenant or the colonel could not give, that the latter must give the order first to the corporal, and then have it extended by him to the individual ordered, the conclusion would be inevitable that wide-spread lunacy had overwhelmed the garrison. And if on ship it was discovered that the captain could not give an order to a seaman unless the order be extended through the mate, one would say that the vessel and crew were in imminent peril, and that absurdity had reached its climax. And yet such is the condition of affairs, as is known, at the hospital mentioned. A ward nurse actually had the impertinence to require of a staff officer that his orders to a sub-nurse should be extended through herself. The staff must hereafter (according to rules now existing), when desiring to see the tongue or

other parts (private or otherwise) of a patient, ask the ward nurse to be kind enough to instruct the sub-nurse to request the patient to be obliging enough to put out his tongue or expose any part of the body which is to be inspected.

It is difficult for the reader to believe that a medical journal is called upon, in behalf of the Profession, to publicly protest against such enormities and absurdities; yet such is the fact. Never before have such inexcusable indignities been foolishly heaped upon the members of a polite profession. Never before have the members of a hospital staff been as much wronged in the discharge of unrewarded labor. They are entitled to protection, and should have it from their colleagues and their brethren. The staff could resign, but this would be flying from the field; it would be an ostrich mode of defense.

Those enacting such unwise and unjust rules are subordinates beyond doubt, for they derive all of the authority so grossly abused from the Municipal Council. The Louisville City Hospital is a public and not a private institution. It belongs to the people, and not to any one or any set of individuals. It is intended solely for the relief of the destitute sick. Physicians only can render therein the service demanded, and without them the institution would become an empty and useless pile. Physicians might charge for service which none but themselves can render, but they never do this; they give their entire services without money and without price. They are entitled for such labor, as well as for their skilled knowledge, not only to consideration, but to the highest consideration. Nurses are created or appointed to carry out the orders of the physicians in the dietetic, medicinal, and hygienic care of the sick. The nurses are manifestly, therefore, the subordinates of the physicians. When power is given to head-nurses to give orders to subordinate nurses, and when this power is denied to the official superiors of the head nurses, the physicians, such a condition of affairs is not only an official anomaly, but a manifest absurdity; an inexcusable wrong; a wrong that must be corrected.

The Board of Commissioners appointed by the people to take charge of this hospital and legislate for it, are, as a rule, good men; anxious to do their duty; men who would not, it is

believed, be guilty of meanness or injustice; but they are unprofessional men; men wholly uninformed in regard to medical matters and the medical care of the sick. Under such circumstances they should be materially guided and efficiently advised by medical men. When, instead of being so guided, they seek to work independently of the hospital staff and in a manner wholly unjust to it, every one must admit that a great wrong is perpetrated; a wrong to the sick, to their guardians, and to the Public; and however good such Commissioners may be as men, they are essentially bad as officers. They should have a respectful but firm protest sent to them, and if this does not secure for the staff their fullest rights, this protest and appeal should be sent to the creators of the Board of Commissioners; to the fountain-head of authority and power; the people. The appeal should go through the Press to the legal representatives of the people, the City Council. The Medical Staff ask only what is their due, and the people will be prompt enough to secure this for them. The rules enacted are very foolish, and need competent revision.

The Medical Colleges have issued their catalogues, and it is interesting to see how much these differ in the size and strength of the different Faculties announced. In some of the colleges wherein the number of professors is small (as at the University of Virginia, which has only four professors), one might well write over the door of the Faculty-room, "*Multum in Parvo*"; while over this door in other universities, wherein the Faculty is large, there might justly be written, "*Parvum in Multo.*" The strength of a Faculty depends not upon the rank of its members, but upon its material. The Association of American Medical Colleges recognizes this fact so thoroughly that it does not require of a Faculty that its members should be even graduates of medicine; they may be simply "licentiates." Simpletons may say differently, but this is the decision of the ablest medical corporation in America; a decision subscribed to by all of its members as an essential requisite for membership. The bond may be dishonored, secretly or openly, but only by dishonorable men. Catalogues received all show that the standard branches required will be fully taught.

EDITORIAL GRANULES.

The Nebraska State Medical Society pronounces the restrictions upon quackery by the Code of Ethics as "gags," and elects to its offices advertising specialists.——The English medical journals regard French hospital surgery as homicidal on account of the filth of the hospitals, their instruments, beds, etc., and the slovenness of the nursing "sisters."———One part oil of turpentine, seven parts benzine, and five drops of the oil of verbena make a cheap, aromatic, and self-generating disinfectant.———The "Cincinnati Lancet and Observer" and the "Cincinnati Clinic" have been discontinued, and a new combined journal, the "Cincinnati Lancet and Clinic," takes their place. The second number has appeared. The journal is a neat, double-column, sixteen-page weekly at $3.50 per annum. It is well prepared. Its editors term it "the representative journal of medicine of the West." They do not need encouragement, as in their judgment their bantling has already become all that it can become. "Virtue is its own reward," and so generally is modesty; facts worthy of remembrance.——Polli, of Lombardi, has done good service by calling attention to the antiseptic and therapeutic properties of boracic acid. He shows that its antiseptic powers are unsurpassed, and that in chronic suppurations the acid administered internally modifies and ameliorates the suppurating surfaces.——Hereafter the Medical Faculty of the University of Michigan are to be aided in all examinations of candidates for graduation by assistant examiners appointed by the Board of Regents. As the result of this plan, the vote of the Faculty will not be decisive, unless the assistant examiners vote with them. The method adopted will give much satisfaction, as tax-payers must feel that disinterested examiners will vote only for those qualified, and that each candidate will stand strictly upon his merits. Where the people support a university, they will feel more satisfied to have their immediate representatives, wholly disinterested, thus invested with power and authority. The regular Medical Faculty will not be required hereafter to examine the homœopathic applicants for graduation. An excellant plan. This Faculty will indoctrinate them with sound medical views, but will have nothing to do in author-

izing them to practice their peculiar heresy.——Wyeth & Bro., of Philadelphia, have introduced a valuable species of lint for surgical purposes. It is made entirely of paper.——The President of the Board of Regents of the Kentucky School of Medicine, in his address to the graduates in June, 1878, advised them, as they could not advertise in the daily papers, to get up a foolish newspaper controversy on the identity of variola or varioloid; or to have a hat named after them and extensively advertised; or to have a buggy called after them and extensively advertised; or to go to patients by railroad on a special engine, and have the trip and the time bulletined to the Public; or to be elected to the Board of Public Schools, and be advertised in the public proceedings; or, as he might have said, to resort to other tricks equally transparent and thoroughly understood. If one can control a page of advertisement, by the year, in a medical journal and have a wood-cut of a buggy (called after himself) inserted, with the usual exaggerations as to the merits, originality, etc., etc., of the vehicle, this plan will be found to attract sensational attention even among the most astute of the Profession. For a first-class piece of clap-trap it is unsurpassed.—— Memphis is to have a medical college. The movement is intended to meet a great and manifest want, and to teach students the peculiar diseases of that latitude, etc. The diseases of that longitude will, of course, be included.——St. Louis is to have another medical college; still to meet that old want. The insatiability of the Public in this connection is simply marvellous; that is, if one's opinion is to be influenced by the published prospectus issued on such occasions.——The Ft. Wayne Medical College has been dissolved. The new institution, it is said, will be called the Medical College of Fort Wayne, and will not be responsible for any of the responsibilities of the deceased Body. The difference between tweedle-dum and tweedle-dee is by the rabble supposed to be insignificant, but at times to the initiated it is inexpressibly great. *Verbum sap*, etc.———So far the microphone has done but little for surgery and nothing for medicine.———It is said that the family and friends of Mr. Harrison, whose body was found in the Ohio Medical College, have instituted a suit for $10,000; and that

the family of Mr. Devens, whose body was recovered from the Ann Arbor Medical University, have also commenced suit for a similar amount.——The reader will be interested in the following brief statement of the proceedings of the Association of American Medical Colleges at their late meeting in June at Buffalo, N. Y. The following list comprises the names of the regular and affiliated members: Jeff. Med. Col., Pa.; Col. Phys. and Surg., N. Y.; Lou. Med. Col., Ky.; Med. Dep. Univ. of Lou., Ky.; Chicago Med. Col., Ill.; Ky. School of Med., Ky.; Rush Med. Col., Ill.; Med. Dep. Univ. of La., La.; Hos. Col. of Med., Ky.; Med. Dep. Iowa State Univ., Iowa; Med. Dep. Univ. Wooster, Ohio; Cleveland Med. Col., Ohio; Detroit Med. Col., Mich.; Miami Med. Col., Ohio; Dartmouth Med. Col., N. H.; Mo. Med. Col., Mo.; Med. Dep. Univ. Nashville, Tenn.; Med. Dep. Univ. of Vermont, Vt.; Starling Med. Col., Ohio; Kansas City Col. Phys. and Surg., Mo.; Med. Dep. Univ. of Mich., Mich.; Ind. Med. Col., Ind.; Med. Col. of Fort Wayne, Ind.; Bellevue Med. Col., N. Y.; Woman's Hos. Med. Col., Ill. Eighteen of these colleges were present by delegates, six were absent. The Ohio Medical College, Alabama Medical College, and Galveston Medical College have applied for membership. The following colleges have filed their charters: Physicians and Surgeons, N. Y.; Bellevue, N. Y.; Lou. Med. College, Ky.; Ky. School of Medicine, Ky.; Medical Department University of Louisville, Ky.; Chicago Medical Colloge, Ill.; Detroit Medical College, Mich.; Starling Medical College, Ohio. The annual report required of each college has, with the exception of seven colleges, been filed. All of the Louisville colleges filed their reports. University of Missouri and College of Physicians and Surgeons, Ind., will apply for affiliation. Application of Medical Department Howard University, D. C., refused on account of irregularity of its lecture fees. Nashville Medical College diploma and tickets unanimously repudiated, because this college gives two graduating courses in one year, and accepts three years' practice in lieu of a course of lectures. The old officers were all reëlected. It was moved and carried that all medical colleges send two delegates to a meeting of medical colleges at Atlanta, Ga., on the first Monday of May, 1879.

Object: "To raise the uniform standard of medical education." Professor Flint offered the following resolution, which was adopted: "That the Secretary of the Association be, and he is hereby, directed to furnish, once in each year, to each and every college member and to each affiliated college, a printed list of college members and affiliated colleges, the diplomas and tickets of which are to be recognized by the college members and affiliated colleges." The facts given in this report were obtained from the Buffalo newspapers. It is a pleasure to note that the Louisville Medical College and the Kentucky School of Medicine were among the few colleges which had complied with all the rules and requirements of the Association. The Atlanta Medical College is an applicant for admission into this Association; so also is the Medical College of Missouri. Four members of the Association have just had their membership suspended, because the annual reports required have not been made. It is only by such discipline that the Association can maintain the confidence of the Profession; its own respect; and more than all else, its corporate integrity and existence. In the published proceedings just received, the names of delinquents in regard to money assessments are published.——Sunstroke has been general and very fatal. Cerebral congestion and cerebral anæmia have each been manifested. To treat all cases by cold applications is therefore foolish.——In this Journal (May number) and under the editorial caption of "Medical Jurisprudence," it is stated that the physician (Dr. Cox) who was called to see the woman suffering from a wound of the princeps cervicis artery, "stuffed the wound," etc. This gentleman states that the hæmorrhage had ceased when he arrived, and that he only found it necessary to apply a roller bandage over a compress; that the wound was repeatedly sponged by himself or an assistant for several days, and that hæmorrhage did not recur until the eighth day. This statement is made for him and at his request, and should have appeared in the June Journal; it was overlooked.——Yellow fever has appeared at the Brooklyn Navy Yard, N. Y., and so far with marked fatality.

RICHMOND AND LOUISVILLE

MEDICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. I.—*A Case of Successful Aspiration of the Spleen.* By WILLIAM A. HAMMOND, M. D., Professor of Diseases of the Mind and Nervous System in the University of the City of New York, etc.

So far as I am aware, no case of aspiration of the spleen has yet been reported. Dieulafoy,* the inventor of the aspirator, does not even mention the use of the instrument in connection with the spleen, although insisting on the advantages to be derived from its employment in certain diseases of other viscera. The spleen has been opened several times for abscess by trocar or incision, but the results have generally been bad. A successful case is, however, reported by Gluge.† In this instance caustic was first employed to excite sufficient inflammation to cause adhesion between the spleen and the abdominal wall. An exploratory puncture was then made, and an affirmative result being obtained, the abscess was opened by incision between the ninth and tenth ribs. A drainage tube was next inserted, and the flow of pus further facilitated by the use of poultices.

But although the spleen has been punctured for the evacuation of abscesses, no operation, either by knife, trocar, or aspirator, has yet been performed for the condition of softening resulting from inflammation or infarctus. The organ has been

* A Treatise on the Pneumatic Aspiration of Morbid Fluids, etc. Philadelphia. 1873.

† Alcés de la Rate: Gueriron. Bulletin de l'Academies Royale de Belgique 1 iv, p. 125. 1870.

several times successfully removed either wholly or in part, but until the invention of the aspirator this procedure was less dangerous than puncture or incision, owing to the greater liability in the latter to the escape of pus or broken-down spleen pulp, etc., into the cavity of the peritoneum.

W. P. T., a gentleman residing in Parkersburg, West Virginia, consulted me February 10th, 1878, after having suffered for several weeks with a disease which had been diagnosticated as inflammation of the spleen. When he came under my care he had been liberally treated with quinine and blisters, and the hypertrophy had been considerably reduced, but all medication had failed to still further lessen the size of the spleen or to ameliorate the pain, difficulty of breathing, and febrile movement which still existed. When I first examined him there was great tenderness on pressure over the region of the spleen, and the inferior border of the organ was about three and one-half inches lower than it should have been if in the normal condition. So far as I could determine, there were no adhesions between it and the abdominal wall, though I received the impression very strongly that it was adherent to the diaphragm. The principal feature, however, of the physical examination was that while the lower portion of the spleen was of firm consistence, the upper part was soft, and gave evidence of fluctuation. The enlargement appeared to be situated in this region, for it was here that the anterior abdominal wall was protruded so as to make the swelling evident on simple inspiration.

I prescribed a solution of sulphate of quinine in Fothergill's hydrobromic acid, and applied the primary galvanic current to the abdomen, so as to act directly upon the spleen. The object of this measure was to induce contraction of the fibrous coat of the organ. As there was still evidence of some degree of active inflammation, I made use of the actual cautery as a counter-irritant, making the application over the point of greatest prominence. I then suggested the use of the aspirator for the purpose of removing the softened mass, consisting, as I had no doubt, of broken-down spleen pulp, pigment and blood, more or less in a state of decomposition, and it was agreed that if in the course of a few days there was no decided improvement, the operation should be performed.

Though the treatment administered was to a certain extent beneficial, I could not perceive that there was any marked reduction in the size of the spleen, and, therefore, in accordance with the urgent request of the patient, as well as with the dictates of my own judgment, I determined to perform the contemplated operation.

Accordingly, on the 16th of February, the patient reclining on his left side, I introduced a large aspirator needle through the intercostal space, between the ninth and tenth ribs, at a point two inches behind a line let fall from the left axilla and on a level with the middle of the eleventh dorsal vertebra. The skin and latissimus dorsi were pierced, the former tissue having been well drawn upward to the extent of over an inch, and then the ratchet of the aspirator was turned so as to create a vacuüm, and the point of the needle carried in a direction towards the umbilicus, through the intercostal space into the spleen. At a depth of about an inch and a quarter the instrument began to fill up rapidly with a dark, grumous fluid. This was forced into a wide-mouthed graduated jar, and exhaustion again effected, and so on until eight and one-half ounces were evacuated. Whether all was removed or not, I could not certainly determine, as the needle became clogged. Rather than exert any great degree of force, I determined to cease, at any rate for the time being, deeming it preferable to repeat the operation if it should be necessary. The needle was accordingly withdrawn, and the spleen allowed to resume its normal position, thus effectually preventing the entrance of air into the peritoneal cavity.

The patient expressed himself as being at once relieved of pain, and as being enabled to breathe with more ease than before the operation. The size of the spleen was manifestly reduced, the lower border being an inch higher than it was when I examined him just before introducing the needle. Rest in bed was rigidly enjoined, though no dressings or bandages of any kind were applied. When I visited the patient at eight o'clock the same evening, he was perfectly comfortable. There was neither pain nor fever, and he had slept quietly several hours.

The next day Professor A. L. Loomis visited him at my request, with special reference to the pleurisy with which the patient evidently suffered. He found friction murmurs all over both sides of the chest, and pronounced the case one of as extensive pleurisy as had ever come under his notice. He was also kind enough to examine the region of the spleen. He expressed the opinion that there had been acute inflammation of the organ and subsequent softening, and that the operation had probably, by removing the degenerated tissue, prevented the formation of an abscess and the death of the patient.

There were no untoward symptoms of any kind; Mr. T. continued to gain in strength, and the uncomfortable sensations in the splenic region were so far lessened that, on the 27th of February, he went to Baltimore to remain a few days before going to his home. At this time (May) he suffers from no other symptoms than those resulting from the pleurisy, and these are gradually disappearing.

Microscopical examination of the removed substance showed it to consist of broken-down spleen tissue, spleen pulp in a greater or less degree of disorganization, blood and a large quantity of pigment free and contained in cells, the former greatly predominating. There were also numerous white blood corpuscles. On allowing it to stand, the pigment soon settled to the bottom of the vessel, forming a stratum one-tenth the depth of the whole column.

In regard to the clinical and pathological history of softening of the spleen, I can not do better than condense the chapter on the affection which Peltier gives in his excellent monograph.*

"Softening of the spleen is met with in various degrees of completeness, from a very slight diminution of consistence to entire liquefaction. Sometimes the size of the organ is increased, at others it is diminished. The tissue of the spleen is disorganized, often being unrecognizable and presenting the appearance of a reddish-brown broth contained within the coats.

"The affection is met with in various diseases, but is more common in pernicious intermittent fever than in any other,

* Pathologie de la Rate. Paris, 1872, p. 56.

though it may be an accompaniment of any other miasmatic intoxication. It is also seen in cases of severe cerebral disorders, in glanders, in malignant pustules, in pyæmia in puerperal fever, scurvy, typhus and typhoid fever."

As to the immediate cause, authorities differ. Some ascribe it to congestion, others to inflammation, others to a special degeneration, and others to chemical decomposition. In his chapter on infarctus, he states that this condition has a great tendency to terminate in softening.

Softening of the spleen is a condition generally terminating in death. Nevertheless, there are a few cases on record in which softening has been diagnosticated, but in which recovery has taken place.

It is very certain, however, that the case under notice was not one of simple softening. The large amount of pigment present can not be overlooked, and doubtless had much to do with originating the inflammation or infarctus, or both, of which the softening was the immediate result.

There are several points of interest connected with the operation to which reference might be made. The most important of these is, I think, the comparative freedom from danger of the procedure when properly done. I have repeatedly in cases of hypertrophy of the spleen injected a drachm or more of the fluid extract of ergot into the organ without in any case observing the least untoward result. Care should be taken to make the opening a valvular one, and to puncture in an intercostal space, and where the spleen is in contact with the solid abdominal wall.

Again, the puncture should be made in such a way that the point of the needle enters the spleen at an acute angle to the surface. The flow of blood into the peritoneal cavity, even if liable to take place, is thereby greatly impeded. The great contractility of both the serous and fibrous coats of the spleen greatly militate against the liability to danger from this cause.

ART. II.—*On the Management of Pregnant Women.* By MONTROSE A. PALLEN, A. M., M. D., Professor of Gynæcology University of New York; Obstetric Surgeon to the Maternity Hospital, etc., etc.*

Within the past year three cases of pseudocyesis have come under my observation, which remained unrecognized until the presumed period of gestation had arrived.

In July, 1877, a medical friend requested me to see a case in which he had been retained as accoucheur. Relying upon his patient's statements, no examination was made until the expected date of confinement. The lady in question had grown rapidly fat in the abdomen, was very anxious for offspring, and having fully made up her mind that conception had taken place, anticipated that her delivery would ensue some time towards the end of June. As some of her female friends had persisted in the statement that menstruation during pregnancy was not uncommon, as her catamenial discharge was frequently pale and almost colorless, and as she had not the shadow of a doubt about fœtal movements, together with a slight milk discharge from the breasts (if she was to be believed), she stoutly maintained her pregnancy to the last. Vaginal examination revealed a uterus normal in size, slightly retroverted, and a hypertrophic elongation of the anterior segment of the cervix.

The second case was that of a lady who came from the West to place herself under my charge for accouchement.

Mrs. K., married a second time at forty-six years of age, and having borne two children by a previous marriage, fancied that impregnation had immediately followed her present union. When I saw her, in December, 1877, a casual glance indicated a woman far advanced in pregnancy. She was chloro-anæmic and her feet and legs anasarcous. On my first visit no vaginal examination or abdominal palpation was made, but a specimen of urine obtained, which subsequently revealed albuminuria in a very slight degree. During the following week a very rigid exploration discovered abdominal ascites and an enormously enlarged spleen reaching almost down to the iliac crest. The

* Read before the New York Obstetrical Society, May 21, 1878.

uterus was actually atrophic, very pale, and hard. She had not menstruated for eight months. The amenorrhœa was probably due to profound malarial poisoning, and was also possibly connected with the menopause.

The third case was sent from the waiting wards of Charity Hospital during the present month (May, 1878,) to the Maternity Hospital, and although she fancied herself in labor, the House Physician (Dr. Cladyk) on duty soon discovered that it was a case of pseudocyesis. Strange to say, the woman had menstruated regularly, yet no examination was made. In fact, at the time of her entrance into Maternity Hospital she was menstruating, and believed that she was flooding.

I have seen one other case of pseudocyesis, where I was summoned to attend an imaginary labor, the patient having regular and severe pains, to all intents and purposes. The deductions and teachings of these facts are, that the FIRST DUTY OF AN ACCOUCHEUR IS TO DISCOVER IF HIS PATIENT BE ACTUALLY PREGNANT! In the management of the pregnant woman, much of very great importance devolves upon the obstetrician, not only with regard to the safe conduct of the mother to parturition and the preservation of the child, but his own reputation is involved as well. So much of accident might be averted, and so much of real good done to the woman by proper management, that I am quite at a loss to comprehend why obstetricians have hitherto neglected to pursue the study of their duties; thereby signally promoting the advance of science in a direction quite worthy of the profoundest investigation. The diseases of pregnancy offer a rich mine for exploration, and the conditions which beget them are not thoroughly treated by any of the standard works upon midwifery. Nothing has been written to develop a study of the avoidable accidents of this state, but instead, much theory has been indulged in concerning the pathological or physiological relationship of the blood and nervous system of the mother when carrying her developing and growing fœtus.

Pregnancy having been established, the woman's history, her surroundings, station in life, age, primi or multiparity, general condition, and period of gestation must be inquired into; after

which a physical examination should be inaugurated to determine the diameters of the pelvic straits; the symmetry and size of the excavation; the normality, position, and integrity of the vagina and uterus; the elasticity of the abdominal muscles; the presence or absence of umbilical, inguinal, or femoral hernia; the shape and size of the breasts and nipples; and the presence of enlarged or varicose veins of the lower extremities or of the pudenda. The urine must be chemically, physically, and microscopically examined, and the state of the bowels carefully investigated. Heart, spleen, and liver must likewise be studied, and not infrequently the patient herself calls attention to anomalous conditions of the stomach, bladder, salivary glands, vulvar and vaginal follicles, and draggings and soreness at the interdigitations of the oblique abdominal and serrati muscles.

Psychological phenomena often call for a study and differentiation of every form of hallucination, delusion, illusion, as well as the delirium of cerebral hyperæmia, or the frenzy of the maniac from toxæmia and eccentric irritabilities.

Uterine or normal impregnation should be positively determined, as contradistinguished from tubal or abdominal pregnancy. I purposely omit interstitial or cornuate fœtation, as a diagnosis of such an accident is hardly probable at the stage and period of gestation, when it would be of actual and preventive value.

The state of the fœtus, its strength and viability, as well as the implantation of the placenta, must not be overlooked in the search as to how the management of the pregnant female should be conducted.

Prevention of puerperal fever, at least the avoidance of infectious and extraneous influences, can be utilized with marked and decided benefit.

I propose, therefore, to consider some of these general conditions, and to make such suggestions with regard to their prophylactic management as have presented themselves after a careful study of the facts in question. Much might be said of the theories and practice of recognized authorities, but I desire to offer simply my individual deductions. The rapid progress

of civilization as evidenced by the accumulation of wealth, the "forcing" system of education, and the tendency to equalize women's duties with those of men, have within the last quarter of a century markedly deteriorated the child-bearing capacities of large numbers of the women. These facts are especially applicable to residents of crowded cities. Subinvolution of the uterus, flaccidity of the pelvic supports, and chronicity of shattered nervous systems have marvellously increased of late years, notwithstanding the so-called hygienic improvements in living and advances in dress. Whilst the standard of female beauty is increasing, and signal intellectual growth manifested in all departments of art and science, the remote dangers, as well as the immediate accidents of parturition, have increased as rapidly. The busy hours of training in public and private schools, the vitiated atmosphere breathed, the illy-utilized light for study, and the later cramming in normal and finishing institutions, urge our girls to a degree of emasculated Amazonian perfection, fitting them superbly to live in women's hotels in communities by themselves, but ruining them for wifely companionship and sturdy maternity. The pregnant woman who comes of a stock not infected with the almost irresistible behests of modern society, stands a much better chance to terminate her gestation in health, than does her more wealthy but unfortunate sister of ultra refinement and excessive culture. The overworked exotic nervous systems of numbers of our women are as prolific of chloro-anæmias, trophic-nerve pareses, hydræmias, and prostrations during pregnancy as are the privations and hardships of poverty productive of fevers, marasmus, and moral turpitude. The girl who marries at the nubile period, about twenty-two years of age, when ossification of the pelvis is fairly done, when the turbulence of puberty has subsided, when she has had time to rest her overtaxed educational training, as well as her strained society rounds, then will she approach the marriage couch with a better prospect of fruition, healthy to herself and offspring, than does she who marries earlier under the stress of fashion, amid the storm-waves of exalted nerve tensions, pubertic irregularities, and illy-formulated morale. The pregnancy of late marriage is likewise to be apprehended, from the fact that the sudden develop-

mental impetus of embryonic life may wear out a soil that was formerly capable to produce successfully, but which has been debilitated by repeated disappointments. The reproductive elements are present, but the elasticity and resiliency of youth, the regulating factors in all growths, are defective, and the newly-stimulated energies of a life somewhat wasted are revived in a physical organism unfitted to do battle. Physical causes are aroused, which, under other circumstances, would not be serious, in the changed status actually become pathological. How often do we not see the plump, rosy-cheeked maiden of twenty shrivel into the parchment-skinned spinster of forty? The ovaries and uterus have properly done their respective duties, and an opportune impregnation prior to the age of thirty would have preserved this woman, if not rosy and plump, at least elastic and buoyant, and her maternity would be exempt from pelvic indolence, as indicated by the flattened chest, the wrinkled face, and the cultivation of some specific hobby. A woman married under these circumstances is like a transplanted tree; the fruition thereof is apt to be feeble if not self-destructive. To the thoughtful accoucheur the influences of the age, history, and surroundings of the pregnant woman demand a prophylaxis of a decided and determined character. From the first, "*the society woman*" must be placed upon a regimen of nerve quiescence by her withdrawal from all the perturbing elements of dinner and theatre parties, with their attendant surroundings of dress and late hours. Nothing is more productive of physical exhaustion than the efforts to keep up the strain of the constant entertaining which many of our matrons undergo. Time and again, the ebb of depression following faster and faster as the gestation progresses upon the flood of excitement, becomes manifest in the frequent demands for stimulation during waking hours, and a call for hypnotics, when tired nature should be soothed by healthy and peaceful sleep. The obstetrician must positively insist upon regular hours, plain but nutritious food, a proper amount of exercise by walking, and when unable to walk, to be manipulated by massage, frequent bathing, an open condition of the bowels, the wearing of flannels, thick shoes, and loose garments. Discipline of inex-

orable firmness is his duty, and he should frankly and honestly impress it upon his patient and her friends. Should she, however, be of the poorer and less wealthy class, and too much labor imposed upon her with insufficient and indigestible food, then the question for improvement in diet and habitation assumes proportions demanding our interference not only as medical men, but as philanthropists. Happily, this class of patients can be assisted by the numerous charities at the disposal of every one, and much benefited in every way, save when mental anguish, repinings, and nostalgia enter as factors, developing an utter incapacity to ward off the depressing influences which bar the healthful action of the *vis medicatrix naturæ*. Fortunately, the laboring woman's sufferings are comparatively rare during gestation, and may be regarded as practically *nil*, unless complicated with certain diseased conditions more frequently encountered in the European than in the native American. In the West and South I have never seen a case of rachitis or mollities ossium in the white woman born of American parentage, nor is the negress often affected. The sturdy pioneers who settled the valleys of the Mississippi and the Ohio engrafted upon their offspring so much of vitality that even now their daughters' granddaughters are rarely subjected to these depressing influences of gestation witnessed in the crowded marts of accumulated wealth in the East.

The *primi* or *multiparity* of the woman is to be very seriously considered in the etiology of the diseases of pregnancy. In the primipara, outside the influences of heritage and surroundings, the question of subinvolution of the uterus, fissured cervix, lacerated perineum, and defective pelvic elasticity are negatived. These lesions, however, are to be sought in the multiparous mother, and often lead to abortion in the earlier months, whilst they are almost certain to develop direct dangers at parturition or trouble subsequent thereto. After the birth of the first child, it is the duty of the obstetrician, whenever practicable, to keep his patient under such observation as will enable him to overcome pelvic disease, whether subinvolution, fissured cervix, lacerated perineum, ulceration, erosion, version or procidentia; and, during such treatment, his injunctions *absque*

marito should be faithfully carried out, lest another impregnation ensue, supplemented with aggravations of these conditions.

The diameters of the pelvic straits, as well as the *dip and inclination of the excavation*, exercise marked influences in the earlier months. In a broad, capacious pelvis with inelastic connective tissue supports, as soon as impregnation ensues and the hyperplasia of embryonic and uterine growth is developed, the tendency is either to ante or retroversion, from gravitation in consequence of increased weight. These exaggerated uterine positions are soon manifested by bladder difficulties in the one, or rectal tenesmus or obstruction in the other. The hyperæmia of the entire pelvis is increased, as interference with the return of the anterior or posterior venous vaginal and uterine plexuses begets stasis, and dilatation of these vessels, as well as of the lymphatics. The result is œdema primarily, then perivascular and perilymphatic ecchymoses, to be succeeded later by varix of the vulva and hæmorrhoidal enlargements within the rectum and around the anus. The cervical follicles being likewise distended, as subsequent conditions of the gestation, are constantly in apposition with the fornix vaginæ; anteriorly in retroversion, posteriorly in anteversion; and the consequence is erosion and ulceration from friction and maceration in the ichorous hypersecretions. Itching and excoriation of the pudenda ensue because of the discharges produced by follicular cervicitis and vaginitis; and by the time the woman reaches her lying-in, she is in a capital condition for the absorption of sepsis, as the focus for fermentation exists in altered cervical structure, incapable of withstanding the bruising produced by the child's head, even if it be not seriously injured by dilatation. The treatment of these conditions is a very simple one, and consists in properly cleansing the vagina with tepid thymol douches (98° Fahr).*

If there be so much tenderness of the vagina and uterus that an ordinary pessary can not be borne (the Meigs elastic ring for anteversion, or the Albert Smith modification of Hodge for

* The formula for this preparation, one I have been using for years, is as follows: R. Thymolis, ℈ijss; vaselinæ, q. s. ad. sol.; glycerinæ, ℥viij. M. S. A tablespoonful to a pint of water thrice daily.

retroversion), I have been in the habit of daily reducing the version by placing the woman in the genu-pectoral position, and lifting the perineum so that the vagina becomes ballooned and the uterus falls into the axis of the inlet, which is kept in position by introducing into the anterior and posterior arches of the vagina sufficient thymolized clay* to fill the upper third of the canal; the lower two-thirds being padded with soft cotton. This makes a perfect pessary-support, retaining the uterus, bladder and rectum in normal relationship. Prior to the next visit of the accoucheur, the patient removes the cotton, and washes out the thymolized clay, when the same process is undergone again. It is remarkable how rapidly some patients yield to this process of treatment.† In many instances it is necessary to continue this method of procedure until the uterus rises from the excavation, lest abortion ensue in consequence of jamming under the sacral promontory in retroversion, or cystitis develops because of the constant hyperæmia engendered by superincumbent uterine pressure. Unless pruritus pudendalis depend upon trophic neuric causes, it nearly always yields after the thymol-clay and irrigation treatment. Herpes, eczema, and kindred affections so often encountered in the later months of gestation are similarly benefited by this antisepsis, more particulary if produced by the acrid discharges from the cervix and vagina. An abdominal bandage swung from the shoulders so

* Thymolized clay is made by dissolving 15 grains of thymol in 30 grains of vaseline, and rubbing it with about three ounces of powdered brick clay.

† I would remark *en passant*, that I never introduce a pessary without first reducing a version by position and manipulation. All versions, unless the uterus be bound down by adhesions, readily rectify themselves by the dropping downwards and forwards of the intestines and the subsequent ballooning of the vagina. Occasionally, however, the womb must be gently tilted forwards from the rectum, previously ballooned by the small end of a Sims speculum, the patient, of course, in the genu-pectoral position. This position is to be obtained by placing the woman on a table, her knees about fourteen inches apart, the femora at right angles to the pelvis, and the chest flat on the plane of the table, with the spinal column at about an angle of 55° towards the pelvis. For many years I have discarded all uterine repositors for the rectification of versions, because they are apt to injure the endometrium and invariably give rise to more or less pain. In an adherent uterus they are useless.

as to lift the uterus well above the excavation is of much benefit, as it facilitates the return of blood and materially alleviates the œdema and lymphatic turgescence.

When the diameters of the pelvis are distorted or contracted, the question of the conduct of the pregnancy has been an unending source of discussion ever since the delivery of Elizabeth Sherwood by Osborn, who succeeded in drawing a putrid fœtus through an antero-posterior diameter "not exceeding three-quarters of an inch." The confirmation of this measurement by Denman would seem to make it a credible operation, although many obstetricians have doubted even the accuracy of his examination. The baneful influences of this historical case have been felt wherever British midwifery has been in the ascendant. Like Ramsbotham's famous plate of a polypus obstructing the descent of the head, Elizabeth Sherwood's pelvis has been transmitted from writer to writer, until it has become a fixture in obstetric lore. The sooner we break loose from the traditional shackles of our predecessors, the sooner we shall be enabled to rescue midwifery from much that has hampered it, much which has retarded freedom of thought to such a degree, that he who dared to doubt met but derision. "Authority" still throttles obstetrics more than any other branch of the medical profession, and in a vast number of instances, authority is but synonymous with antiquity. Hitherto it has been a grave question as to the induction of premature labor in a pelvis with an antero-posterior diameter of two inches or less, and even now one would be loth not to advise the premature termination of gestation were we to be guided by the chronicles of preceding writers. The induction of premature labor at the seventh month is a serious matter for the mother, and extremely hazardous to the child, notwithstanding the boasted successes and vaunted triumphs. Did we know of the numbers of failures, particularly in the sacrifice of the infant, we would not hug the delusion so serenely to our consciences. It is perfectly human to proclaim our victories, and equally mortifying to publish our defeats. If we peruse the writings of Sprengel, Danyan, Madame Boivin, Hornburger, Merriman, Paul Dubois, Naegele, Barlow, Kyll, Huber, Velpeau, Rigby, the Rams

bothams, Cazeaux, Scanzoni, and hosts of others, we are forced to the conclusion that embryulcia is the rule in a two-inch (or less) sacro-pubic diameter at full term, and where premature labor was essayed at seven months, we fail to discover that the child often survived, and that in more than a third of the efforts the mother succumbed from the effort. It is true that some successful issues have been determined by forceps delivery, but these very successes should make us pause and reflect ere we hazard the life of another child, or endanger the well-being of another mother.

In 1768, one hundred and ten years ago, W. Cooper propounded the question of provoked abortion in the third or fourth month to William Hunter, who decided affirmatively when a pelvis was so much distorted as "to preclude all hope of a possible expulsion or extraction of a viable fœtus." For more than a century the rulings of obstetric authority have been in favor of the fœticide, and during this period of time we have had numerous monographs on the propriety as well as the best methods of inducing abortion under these circumstances. We have but to refer to Foderé, Marc, Velpeau, Simonard, Stoltz, Jacquemier, Chailly, Cazeaux, Pajot, Simpson, Barnes, and Leischman, in Europe, as well as James, Dewees, Hodge, Meigs, and others in this country, to find "authority" for the procedure. I hope I will not be considered too radical when I enter my protest against this array of obstetric authority, and plead for the life of the infant and an equal chance for the mother, greater by far than when she is subjected to embryulcia, by declaring that *I would never give my sanction to provoked abortion or premature labor when the integrity of the cervix is preserved.* Instead of certain death for the fœtus, and the greatest possible risk for the mother, I would do as Professor Skene did under similar circumstances; I should make laparo-elytrotomy. The extraction of the fœtus by this operation through the vagina and abdominal wall offers no more difficulty (nor as much) in its performance than does embryulcia, and the prospects of recovery for the mother do not seem to be extra-hazardous. Rupture of the uterus, in consequence of fixation of the fœtus, can be avoided by making it as soon as

labor begins, and the maternal soft parts likewise protected by an avoidance of forcible forceps draggings, sometimes so great as not only to fearfully bruise the vagina and peri-vaginal structures, but even to determine a separation of the symphysis pubis, as related by Madame Lachapelle. Without specifically considering all the points of this very serious question, I would unhesitatingly recommend (where there was no lesion of the cervix uteri) against the termination of the gestation, looking to the ultimate performance of laparo-elytrotomy. The patient, of course, being thoroughly advised in all of its bearings, should not be permitted to judge absolutely of the propriety of its performance, because such conditions can not be decided upon by the woman herself. Rather than be hampered by the judgment of a woman adverse to laparo-elytrotomy, I would not choose embryulcia if she had been previously informed, but would prefer to decline the management of the case. Of course, if placed under circumstances where my cares were absolutely indispensable, no effort would be left undone to save the mother's life, although I should feel that she was being subjected to greater dangers than if laparo-elytrotomy were being performed. Time will show the correctness or injudiciousness of these decided opinions, although I venture to say that future obstetric surgery will prove me to be not very far out of the way in predicting a much larger percentage of recoveries upon the part of the mother after laparo-elytrotomy, than has ever followed embryulcia, and the fœtal mortality will be comparatively nothing.

The normality, position, and integrity of the vagina and uterus are not without vast importance in the safe conduct of gestation. Under certain circumstances, to be presently considered, I would unequivocally advise abortion with as much decision as I have condemned it in deformed pelvis. Abortion should be made in perimetric indurations from cellulitis or cellulo-peritonitis, which would preclude the rising of the uterus from the excavation, or might interfere with post-partum contractions. The destruction of the embryo is likewise warrantable from the presence of large fibroids or cysto-fibromata in the body of the uterus, as they indubitably predispose to ineffi-

cient contractions, and possibly fatal hæmorrhages after delivery. A tumor involving both ovary and uterus also warrants an abortion in the earlier months, prior to the third. After that date, certainly after the fourth month, it would be a most delicate question to determine; whereas the energetic and powerful action of a full-termed womb might be sufficient, although improbable, to cast off the placenta and close the patulous sinuses, circumstances highly doubtful in the fourth or fifth month, when the decidua are more intimately blended. Assuredly, there can be no hesitancy about abortion when cancer of the uterine body exists, because of the great predisposition to ulceration through the structure of the organ and escape of amniotic fluid into the peritoneum during gestation, and the much greater danger of rupture during parturition. I have seen one fatal case of cancerous ulceration through the uterine body with escape of the amniotic fluid and blood into the peritoneum; and I know of several fatal post-partum hæmorrhages where the uterus could not contract because of the presence of large fibroids in its walls. In the earlier months, certainly before the third month, there is a reasonable prospect of controlling the hæmorrhage by tamponing and the use of Barnes' or Molesworth's dilators, coädded to a prompt removal of the placental formation, and injections of very hot water or tincture of iodine or the sesquichloride of iron.*

The mere mention of retroversion of the uterus in the earlier months of gestation ought to be quite sufficient to direct every accoucheur to the importance of rectifying the malposition. Yet I have latterly seen so many cases of abortion depending upon this cause, that I can not refrain from giving it prominence. During the past two years, eight cases have presented themselves for treatment at my clinique in the university, whose history showed one or more (in one case three) abortions at the

* Hot-water injections have been lately recommended for post-partum hæmorrhages by Mr. Lombe Atthill, although Dr. Thomas Addis Emmet, some years since, called attention to its efficacy. In quite a number of hæmorrhages from the non-pregnant uterus it has been very beneficial in my hands, and as long ago as 1867 I spoke of its use in the metrorrhagias of fibromata of the uterus in a paper on "Intra-uterine Injections," published in the "St. Louis Medical and Surgical Journal."

Lever, Frerichs, and Rosenstein) of the interference of circulation in the kidney in consequence of pressure of the impregnated uterus upon its vessels. Heller (of the University of Kiel) has latterly studied the distribution of the left renal vein in a large number of autopsies, and finds that its course is such as to be in no wise liable to pressure from the pregnant uterus, as, in the majority of cases, it crosses the vertebral column in front of the second lumbar vertebra (frequently between the first and second lumbar vertebræ), and is hidden by the body of the pancreas. In fact, the uterus would have to be very much bent backwards to touch either the first or second lumbar vertebra, whereas in every case of normal pregnancy it is inclined forward, and the retro-utero abdominal space is filled with the intestinal folds, which act as a cushion or pad, preventing the uterine body from compressing the renal veins, even if it were disposed to retro-flexion, a condition totally at variance with the inclinations of the spinal column and pelvis.

Bartels very correctly observes that the cessation of albuminuric nephritis, with the termination of pregnancy, by no manner of means indicates that the lesion had been produced because of venous stasis in consequence of compression and obstruction of the left renal vein by the uterine body. He further adds, that "the cessation of renal affection at the termination of pregnancy proves no more than that the pregnancy was the cause of the renal disease." My own idea is that the cessation of the nephritic trouble at the termination of gestation is owing to the withdrawal of arterial tension, the reëstablishment of normality in numbers of white corpuscles, and an equalization of fibrin formation. In other words, the emptying of the uterus withdraws the factor of blood deterioration, diminishes cardiac hypertrophy, and lessens the intensity and quantity of the general blood distribution, and thereby relieves the fluxion, stasis, and congestion of the kidney. The strain and subsequent relaxation of the walls of the blood-vessels cease with a diminution of systemic arterial tension. It is almost a demonstrable fact that albumen is filtered into the renal tubes whenever there is unnatural increase of blood pressure, and that this vascular tension sooner or later begets an

altered state of the blood-vessels themselves. This alteration of the blood-vessels must invariably be productive of blood stasis and perivascular change, inducing structural lesion. Stokois arrived at these conclusions by experimenting with animal membranes for the purposes of the filtration of albumen fluids. He found that the albumen in the filtrate "increases directly in quantity according to the degree of pressure employed." In the kidney, the capillary coils of the Malpighian tufts become filters through which the albumen of the blood is squeezed under the high arterial tension of pregnancy. Under high pressure alone, a condition usually found during gestation, the urine may be loaded with albumen without any organic change whatever in the kidney, cortex, or in the tubes. This is the case when albuminuria ceases at parturition; but so seldom is this the result that I have never yet seen it, although I can recall a number of albuminuric pregnancies where the urine was not only loaded for weeks, but contained traces of albumen for months after the birth of the child, together with casts in variable numbers. Is there a prophylaxis for the albuminuria of parenchymatous nephritis, and consequently the avoidance of eclampsia at parturition? The experience of several cases warrants a strong hope that very much can be done.

Mrs. X., aged twenty-seven, chloro-anæmic and feeble, placed herself under treatment in May, 1877. She was pregnant with her third child, and presumably about four months gone. In January, 1876, she was delivered of a dead child in the eighth month of gestation during a profound coma following severe puerperal eclampsia. Her first child was delivered at full term in December, 1874, robust and healthy, and the parturition was normal. No history of albuminuria could be obtained concerning the delivery of '76. When I saw her in May, '77, she was very much prostrated, extremely pale, and suffered constantly with headache, tinnitus aurium and some slight impairment of vision (the opthalmoscope revealing œdema of the retina, with maceration of the pigment in the bifurcation of the arteria centralis retinæ of the left eye); the feet were anasarcous to a moderate degree, and there was puffiness of the eyelids. A marked venous murmur was heard at the base of the neck,

and the systolic souffle was pronounced. The urine was alkaline, depositing the ammonia phosphates in large quantities, as nitric acid and heat developed a very considerable quantity of albumen. The microscope revealed numbers of epithelial casts. The prognosis certainly was most unfavorable, nevertheless she was put upon a rigid and exclusive diet of milk and kumyss, and kept in bed. She had daily spongings with warm water and alcohol, followed by inunctions of vaseline over the whole body. After ten days of this treatment she took in addition a Turkish bath every third day for three months. For two months, except when taken to the Turkish bath, she was not permitted to rise from her bed, nor even to feed herself, and was manipulated in massage during the whole time. The urine was examined every day, and for three weeks there was no perceptible change, but in the fourth week the litmus paper began to manifest an acid reäction, and there was a cessation of the sedimentary deposits; the albumen, however, still persisting. At the end of the eighth week, the anasarca of the feet, as well as the retinal œdema, was almost gone. The puffiness of the lids persisted after the termination of gestation. During the eleventh week (which was the beginning of the eighth month of pregnancy) she was allowed to walk about her room, as the ventricular and venous neck murmurs had disappeared. The albumen was decidedly less and the urine markedly acid. Her color was most excellent, the lips and ears being pink. The muscular system had been thoroughly developed by massage. When her lying-in occurred, she had gained thirty-one pounds, weighing one hundred and thirty-seven pounds, in contradistinction to one hundred and six pounds in the beginning of the milk and massage treatment. For nine weeks, that is from May 19th to August 1st, this patient lived exclusively upon milk and kumyss, with a few water-crackers, plain or toasted, according to her fancy. From August 1st to September 22d her diet was mixed, but she ate very seldom of meat, being allowed a lamb-chop on alternate days for luncheon. Vegetables and fruits were used twice daily. The only medicine she took during the four months was two ounces of Hunyadi Janos water every second morning for the first four weeks; after that period the bowels

continued soluble. On the 22d of September she was safely delivered, without any sign of convulsion, of a vigorous female child after a labor of five hours. From that time to January 12th, 1878, examinations of the urine revealed albumen in constantly diminishing quantity, with casts likewise fewer in numbers. The puffiness of the lids persisted until about the end of December, '77. At this date (May 17th, 1878,) just one year from the time I first saw her, there is not the slightest indication of nephritic trouble.

I relate the above case somewhat minutely, because it is a practical illustration of what I deem to be correct in the treatment of the parenchymatous nephritis of pregnancy; and, as a consequence, the proper prophylaxis of puerpeal eclampsia depending upon it. First, the hyperæmia of the kidney was thought to be diverted to the skin surface by the hot water and alcohol spongings, and the skin kept soft and the pores open by means of the vaseline inunctions; to this was added the hot air or Turkish bath, which developed decided diaphoresis. Milk was given as the most digestible of foods, and as being highly albuminous; coädded to it, kumyss (which is but a fermented milk) was likewise administered, because of the very slight amount of and easily digestible alcohol in it. I thought this very small quantity of alcohol might act as a diffusible stimulant and heart tonic. She was kept in bed, because of the desire to maintain the skin at a uniform temperature, in order to keep up the fluxion towards the surfaces and to avert any tendency to further hyperæmia of the kidneys. She was not permitted to move about, but, on the contrary, kept perfectly quiet, because absolute rest coädded to massage very greatly facilitates the complete digestion of milk. Massage, which is literally the lifting up and grasping of as many single or groups of muscles as the manipulator can pinch and stroke, exercises them without any fatigue to the patient, likewise stimulating the blood current in the sluggish and dilated capillaries of the intermuscular and areolar spaces. Massage thereby overcomes arterial tension by equalizing the blood current in consequence of the stimulation and contraction of the capillaries and venous radicles. Without the nutrition brought about by the quanti-

ties of digested milk, it would not be of much value, because alone it would not diminish the white corpuscles, nor would it increase the red globules of the blood. No medicine was administered, because I know of none that will deplete a hyperæmic kidney depending upon the arterial tension of pregnancy. The cathartic Hunyadi Janos water was administered simply because it is about the best aperient I know of, and this patient suffered in the beginning with considerable inflation of the ilium and colon in consequence of obstinate constipation. The aperient was not given with any other view than that of relieving the flatus. Should we be summoned to a patient in whom the parenchymatous nephritis had already progressed to such a degree that she was suffering from or threatened with eclampsia, *co-added to chloroformation, I would not hesitate to bleed.* Blood-letting is not in vogue these days, but twenty-five years ago, when I began the study of medicine, I saw it tried many times in puerperal convulsions, and beneficially practiced. My father, who lectured on obstetrics for thirty years in the St. Louis Medical College, used to say that he never regretted bleeding under such circumstances, and that he never lost a patient whom he so treated. Bartels, who is the latest writer on this subject, reïterates the same doctrine. The blood-letting relieves the weight and intensity of the column of blood, and may save the cerebral vessels from rupture. It gives us time by slacking up the œdema of the perivascular spaces, and actually withdraws a certain amount of toxic and deteriorated blood from the systemic circulation; besides, it frees the choked and dilated capillaries of the tension of the superior arteries, and likewise facilitates the reflux from the inferior veins of the body, in consequence of the diminished weight of the blood column. The question of prophylaxis of puerperal eclampsia in consequence of albuminuria, may possibly be determined by the study of pregnancy from its inception to such a degree of certainty that we may eliminate from obstetric practice the always disagreeable duty of the induction of premature labor. The generally accepted doctrine is to terminate the pregnancy as soon as a viable fœtus can be delivered. From the case above related there is some hope of prolonging the gestation to full term with safety to

both mother and child, and the effort so to do should be made.

Another most unfortunate class of cases with which the accoucheur has to contend, is an abnormal implantation of the fœtus. Extra-uterine pregnancy is seldom suspected until certain dangerous and prominent symptoms become manifest, such as rupture of the cyst containing the embryo, rapidly followed by shock and intra-pelvic hæmorrhage. Under these circumstances but one line of action can be followed; laparotomy must be made. Notwithstanding quite a number of cases have been recorded of recovery from the immediate shock and hæmorrhage, with the subsequent peritonitis, yet so numerous are the fatal results that I would be loth to hesitate in deciding upon abdominal section, extirpation of the fœtus, cleansing the peritoneum of blood and clots, and ligating the bleeding vessels. One fatal case so impressed me with the absolute necessity of prompt action, that I would not hesitate to give the woman the chance of her life, even if her condition was most unfavorable.

Mrs. ——, aged twenty-two years, was found lying in profound syncope upon her parlor floor by a younger sister. The usual domestic restoratives were used, whilst her family physician was immediately summoned. In the meantime several other medical gentlemen were called. Fully an hour elapsed before any one of them reached her, and the diagnosis, of course, was undetermined. Her pregnancy was unknown. Several hours elapsed before consciousness returned, when she complained of excruciating agony in the abdomen, for which opiates were administered without relief until narcotism had almost been obtained. The next day a consultation was held, and never once did the question of extra-uterine pregnancy present itself until the husband informed one of the physicians, who was leaving the house, that she was four months gone in gestation. This led to a reässembling of the consultants with the addition of my father and the late Professor C. A. Pope (all of St. Louis), who was preëminent as a surgeon. After chloroformation, the patient was subjected to a rigid examination, and the fœtus discovered outside of the uterus, floating in the abdominal cavity. Laparotomy was suggested, but the

weight of opinion was against the operation, notwithstanding the patient's pulse improved under the chloroform anæsthesia. The majority of the medical consultants being governed by the fact that there were cases on record of recovery under similar accidents, and that a division of the peritoneum might induce more shock, from which she could not rally. This was long before the days of even Spencer Wells's reputation as a gastrotmist, and Atlee was just beginning to be known as an ovariotomist. On the eighteenth day thereafter the patient succumbed from septic peritonitis and pyæmia. An autopsy revealed fallopian pregnancy, with the sphacelating placenta attached to the peritoneum and completely sacculated. Assuredly laparotomy might have been attempted, and possibly the woman's life saved. Unfortunately "*authority*" ruled the action, and no effort was made to avert the inevitable fate.

Diagnosis of extra-uterine gestation may be made by careful palpation of the abdominal parietes, coädded to vaginal and rectal digital examination. To make out the correct diagnosis, anæsthesia might be induced and the whole hand introduced into the vagina or rectum, or a dilatation of the urethra induced, so as to permit of exploration from the bladder. Should we discover an extra-uterine fœtation, the question of treatment is a very grave one. It has been advised to kill the embryo by passing an electric shock through the sac. This, of course, would check any further growth, and save the patient from rupture and hæmorrhage. But would it avert subsequent trouble? In tubal pregnancy, Dr. Emmet suggests dilatation of the uterus and subsequent dilatation of the tube with a "cot." Is this procedure likely to be successful? As yet it is but doubtful. If we succeed in destroying the fœtus, and no unfavorable symptoms supervene, the case may be left to nature, with the hope of mummification ensuing. Such a fortunate result "is a consummation devoutly to be wished for," yet I am disposed to think that ultimately the patient's safety would lie in laparotomy and removal of the fœtus, allowing the placenta to come away in due course of time by suppuration. Experience has taught us that a vast majority of such procedures are successful, more particularly as we can guard against sep-

ticæmia by drainage and washing out the cavity as fast as putrescence develops.

The prophylaxis of puerperal fever is a question of exceeding great magnitude. Sporadic or endemic puerperal fever will ensue in spite of all efforts, but epidemics of this dreaded complication can and will be avoided by due caution and by "stamping out" every factor in its production. Preparatory antisepsis and quarantining must accomplish such a result. To illustrate these propositions it is but proper to briefly consider the nature and origin of those post-partum conditions that have been grouped generically under the common term "puerperal fever." The conditions of a woman after delivery are similar to any patient subjected to a severe surgical operation, with the addition of muscular exhaustion and traumatic injury of the neighboring parts. In normal uterine expulsive action, the bruising of the cervix, vagina, rectum, bladder, and perineum may be said to be purely physiological, not transcending certain given lines, conducive to a rapid return to healthy action. The health lines are, however, but indistinctly marked; so faint, indeed, that the frequent œdema of the anterior segment of the cervix pending the engagement of the head may be nothing more than simple serum infiltration, or it may be the inception of lymph-vessel rupture, or a perivascular ecchymotic effusion. If, for instance, the waters escape prior to the entrance of the head and energetic contractions ensue, forcing the uterine structures firmly upon the fœtus, as there is no cushion of water to regulate the symmetry of the contractions, then the same conditions of œdema of the endometrium and of the uterus itself may ensue, and frequently progresses to absolute intermuscular ecchymoses and lymphatic ruptures. Let another factor be added—that of constitutional exhaustion—and the woman is in a fair way to develop endometritis, lymphangitis, phlebitis, or metritis, directly in consequence of the labor. The blood oozing from the placental site, particularly if retained at all in the uterine cavity, rapidly decomposes, and the plus factor of sepsis is engrafted upon the direct traumatisms ensuing from the delivery. Under these circumstances endometritis, metro-lymphangitis, or phlebitis, either singly or conjointly, is prone to

development idiopathically, or results from the absorption of septic material from the placental site, or from a possible laceration of the cervix, or from ichorous juices from an ulcerated cervix, or from a ruptured fourchette or perineum. Once inflammatory action is aroused in the uterus, with sometimes incredible rapidity it extends to the peri-uterine spaces to light up cellulitis, peritonitis, lymphangitis of the broad ligaments, or phlebitis of some of the large plexuses of vessel coursing through the excavation. This is the process of idiopathic puerperal fever, and this same process goes on in the epidemic form of the disease with far greater rapidity and fatality, because certain elements of sepsis exist in consequence of communication and contagion, as in scarlet fever and diphtheria. The specificity of scarlet fever or diphtheria is undoubted, because it depends upon the infection of bacteria, which invariably produce blood-poisoning of unmistakable tendencies. So, too, with typhoid and typhus fevers, but they do not require a special surgical soil in which to propagate and generate, nor can they be produced by any manner of traumatism, nor are they ever produced from special operations involving tissues containing rich endowments of lymphatics and veins. Each is a disease *sui generis*, and each one depends upon a specific poison of infection. Not so with puerperal fever; for if it were a specific entity like typhoid, we would find certain localities in certain tissues always primarily affected. On the contrary, we rarely find the same tissues primarily affected in post-partum fevers. In an epidemic which has just been closed out of the Maternity Hospital, I found five cases, happening within a week of each other, to present endometritis and metritis in the first; cellulo-lymphangitis of the left broad ligament in the second; cellulo-peritonitis of the right broad ligament in the third; peri-uterine cellulitis in the fourth; and metro-peritonitis of frightful extent in the fifth.

These facts of the development of inflammations of varied localities of the pelvis in women subjected to the same idiopathic and epidemic influences would indicate the non-specific origin of puerperal fever. In other words, there is no puerperal-fever germ, no elements of special entity such as preside

over the awakening of typhoid, typhus, scarlatina, variola, or diphtheria.

Puerperal fever is a surgical fever arising from the conditions in which a woman finds herself after the extrusion of the uterine contents. The same classes of inflammations supervene in the non-pregnant uterus after operations upon the pelvic contents, in hospitals where patients are crowded together. Similar epidemic influences preside over all hospitals after certain periods of time. Thus I have seen erysipelas, septicæmia, and pyæmia develop in nearly every case operated upon by Nélaton in the wards of the "Cliniques" in Paris to such an extent that the institution had to be closed; and at the same time the "Maternité," at the other end of the quadrangle, was decimated by the most horrible epidemic of puerperal fever that had ever occurred under the management of Paul Dubois. Hospitalism infected both institutions simultaneously, or the contagion was carried from one to the other by the students who were not quarantined, as would be done in the present day. Another strong fact against the specific entity of puerperal fever was its rapid subsidence in the wards of the General Hospital of Vienna, after the students (who "touched" and examined the lying-in women of Braun's wards) were made to wash their hands and thoroughly disinfect them after coming from the dead-houses. Facts as numerous as can be collated in any department of medicine prove conclusively that the infection and contagion of sepsis can be carried by the accoucheur himself, who poisons patient after patient as long as he continues in midwifery practice! Let him, however, cease to attend any new cases, and turn his practice over to some other medical man who has not been so unfortunate, and the puerperal fever generally ceases, notwithstanding the lying-in women live in the same localities, under the same atmospheric influences, subjected to the same system of water-supply, drainage, and sewage. If puerperal fever were produced by a special germ like typhoid or diphtheria, then its elements would engender disease under all circumstances, whether they existed in the drinking-water, the atmosphere, the sewage, or the drainage! Where these special elements of typhoid or diphtheria abound, the

parturient woman does not escape, because of her condition. Not infrequently these very conditions of defective drainage, sewage, poisoned drinking-water, etc., operate towards post-partum sepsis and light up puerperal fevers, which might have developed typhoids or diphtheria solely, if no parturition had taken place. These are but the supervention of new elements of sepsis, coïncidences of the engraftment of other poisons upon the pelvic contents already in a state of preparation for the propagation of the morbid processes incidental to the idiopathic or the epidemic influences producing puerperal fevers. Again, if puerperal fever be a disease *sui generis*, why is it that the endometritis, metritis, metro-lymphangitis, metro-phlebitis, peri-uterine cellulitis, and peritonitis which attack the post-partum woman so seldom indicate themselves prior to labor? Rarely do we find that the "waiting women" of even crowded hospitals manifest any of these symptoms. In some ninety women waiting in Charity Hospital during this month (May, 1878), not one of them has indicated any high temperature before delivery; yet, since the first of May, five of these same patients out of twelve delivered in the Maternity Hospital very rapidly developed puerperal fever within a week of each other. On the 11th of May no more women were sent up to the Maternity, but all were kept in Charity, and since then five were delivered there, and some seven or eight more in the pavilions, and as yet no indications of the epidemic at Maternity have been manifested. All of these women were subjected to the same influences of diet, hygiene, light, drinking-water, drainage, and sewage. Possibly the prophylaxis rigidly enjoined (to be presently described) may have had something to do towards the mitigation of the epidemic. Nevertheless, the history of all these cases strongly urges me to the belief against the specificity or entity of puerperal fever, and as strongly impresses me with the belief in its original development because of the woman's condition, just as similar morbid processes attack all surgical cases where operations have been made upon tissues endowed with lymphatics and blood-vessels in such numbers, as will take up septic material from without, or will ferment it from within, because of injury to or around these same blood and lymph channels.

With these views concerning the nature and origin of puerperal fever, I have for some years past acted as if the epidemic nature of the affection could be averted. Exercising all due precautions not to be the means of conveyance of sepsis myself, I make it a rule never to examine a puerperal woman without freely washing the hands in tepid thymolized or carbolized water; and should I be in attendance upon a case of puerperal fever, *to absolutely refuse the accouchement of a new case.* In the hospital the visits are first made to those cases who manifest no disease, and then the fever cases afterwards. No two women are ever examined without washing the hands with antiseptics between the examinations. The rules and regulations of Maternity Hospital, as determined by the Board, are so rigid and fixed that contagion proper can not be made, as the nurses are never allowed to *touch the pudenda* of the patients, and *every lying-in woman has her own vaginal glass tube, kept on a table by her side in carbolized or thymolized water.* The syringing of the parts is made through these tubes, *the patient inserting her own tube.*

Any high temperature preceded by chill and hypogastric pain occurring in a patient results in her isolation from the other occupants of the wards. In all patients the vagina is syringed every six hours with thymolized or carbolized tepid water, until the flow is perfectly clear and freed from the discoloration of the lochial discharge. Carbolized or thymolized oakum is used to the pudenda to catch any discharge from the vagina, and a clean piece used after each douche, the soiled oakum being burnt. In addition to the vaginal syringing with antiseptic washes, the uterus is thoroughly washed out in cases of fever.

In the cases under my treatment, hot poultices were constantly kept over the entire abdominal surface, and enormous doses of quinine administered, as high as seventy grains per diem in one, and not less than forty grains in any of them. Thymol was administered likewise in doses of one grain to five of the quinine, morphia pro re nata. In the worst case, one of metro-peritonitis, Dr. Cladyk, the house physician, gave her six, seven, eight, and nine grains per diem, successively, by the stomach and hypodermically. All of these women recovered.

With regard to the prophylaxis, every "waiting woman" is syringed twice daily with a quart of tepid thymolized or carbolized water, and her temperature taken once every twenty-four hours. Quinine in ten-grain doses is ordered immediately if any indication of high temperature develops itself to be up until the normal or sub-normal markings of the thermometer are made. Thus far no signs of puerperal cases have manifested themselves in Charity or in the pavilions, although there have been several cases with high temperature, but evidently depending upon malaria.

With proper antisepsis, such as just described; with rigid quarantine, as was done at Maternity, by not permitting new cases to enter where puerperal fevers were lodged; by inflexibly keeping the house staff of the surgical wards, as well as the nurses or those who were about Maternity during the epidemic, from the wards of the lying-in woman; by preparatory douching and watching of the waiting women, I feel quite satisfied that the epidemic has been stamped out. How long this will continue I can not tell, as the same causes which developed it in Maternity may break out in the presumably more unfavorable locality of Charity, with the heritage peculiar to all hospitals. These efforts have been rewarded by a temporary success. Is it not worthy of a trial in all lying-in hospitals, more particularly with regard to the waiting women?

I have in this paper but sketched some of the salient points of the prophylaxis of pregnancy, not thoroughly elucidating or elaborating any one of them. I hope the attention of the Society may be drawn to their thorough consideration, and that a free discussion may evolve all the facts of the subject I could not bring prominently into notice short of a series of chapters that would grow into a very considerable-sized book.

The Berlin Society of Military Hygiene proposes to introduce dogs into the army as auxiliaries of the ambulance corps. By means of the intelligence of these animals it is thought the sick or wounded who fall in secluded places can be much more quickly and certainly found.—*Exchange.*

ART. III.—*Report on the Progress of Anatomy, Surgery, and Surgical Pathology.* By A. W. JOHNSTONE, M. D., Danville, Ky. [Read before the Central Kentucky Medical Association, April 17, 1878.] Published by request of the Association.

Mr. President,—During the term for which you appointed me to keep watch on the progress of Anatomy, Surgery, and Surgical Pathology, no new principle has been demonstrated, nor has any sweeping generalization thrown its concentrated light on the problems which have within the last few years occupied the attention of the surgical world. The advance which we have to record in these departments is nearly all analytical in character, for as yet very little can be done in these synthetic branches. Gross anatomy this year, as in many previous years, has been at a stand still to a certain extent, which proves that it is an exact science, or as near one as we can expect anything to be. Minute anatomy, however, has had many workers in its unexplored regions, who have brought to light some facts which are bound to enter into the structure of the histology of the future. Besides some improvements in the methods of examining the tissues, there have been several discoveries as to the arrangement of the capillary lymphatics of a few organs. The diaphragmatic peritoneum has for some time been the field of discussion for the histologists, but this year's work has effected a great deal towards settling their disputations in favor of the belief that there is a direct communication between its lymphatics and the peritoneal cavity. By new processes and new reägents they have been able to satisfactorily demonstrate not only their stomata, but also their endothelial lining.

Many other questions of interest to the physiologist have been discussed this year, but as some of them overlap the field of the histologist, we feel bound to give them their due prominence. Most conspicuous among these is the supposed discovery by Boettcher of a nucleus to some of the red-blood globules. It is claimed by his adherents that this is really the case, but others assert that the appearance is an artificial one, and that the reägents used give them such a structure by unequally condensing the protoplasm where no such condition existed.

Another step has been taken by Hayem, who asserts that the micrococites are young red-blood globules. He professes with high powers to be able to find them in all stages of development, from the merest speck to the full-grown corpuscle. He claims that they are always present, but that in persons who have suffered from a loss of blood they are far more abundant than in any other condition, thus showing the method by which Nature repairs such damages. There has been a great deal of work accomplished by the microscopists on the nervous system, but beyond the invention of new processes which show out the fibres, cells, and their connections more clearly than formerly, there has been no new discovery. In the minute anatomy of the thymus and other glands there have been some few discoveries, but they are of such minor importance that, in a paper so short as this must be, I shall have to pass them by with a mere mention.

In surgery the past year has been marked by no sudden leap, but the slow and steady gait of 1877 has brought to light many things which will be of use to the anxious practitioner of the future. New surgical appliances have been by no means rare in the last year. Splints have made their débuts by the dozen; new urethral instruments have been present at every reception given them; gynæcology has always been represented by something that was destined to punch or cut the uterus. When these failed to put in a proper appearance, all deficiencies have been more than made up by pessaries, which are still increasing in an arithmetical ratio. Syringes of all descriptions, batteries, cauteries, thermometers, dynamometers, spirometers, ophthalmoscopes, otoscopes, endoscopes, etc., etc., have all joined the stream which annually inundates the instrument-makers' counters, until the glittering cohorts of glass, nickel, steel, and silver, which adorn his cases and show-windows, make the visitor think that he has dropped into "a mermaid's grotto."

Many of the guests of previous years have departed never to return, and before we can say that there has been genuine progress, we must see what will be the verdict of the future.

The one great appliance over which the professional breath is

now being held during its trial, is the antiseptic dressing. There is still quite a hot debate over its merits. Some contend that it will almost raise the dead; others claim that if the wounds are kept as clean as this system necessitates, they would get well any way. Instead of carbolic acid, thymol is now the germicide which is used in this dressing. The advantages claimed for it are, that it has no toxic properties for man; its odor is far more pleasant than that of carbolic acid; and last, but not least, we have the word of Burdon Sanderson for its being one hundred times a more powerful sporaticide than the article which it is about to supersede. The whole principle is now being thoroughly tested in the hospitals of this and other countries, and all that we can do is to wait for the results.

Closely associated with the antiseptic dressing is the catgut ligature. It has been experimented with by such men as Bryant, Maunder, and Barwell, and the conclusion to which they have come is that, while it is less apt to set up ulcerative processes than any other substance, it has a disagreeable tendency to become absorbed in a very short time, if it is drawn tight. This sometimes allows the patient's life to slip out at the place where its noose ought to have been.

Plaster-of-Paris and the other immovable dressings, though they are fast approaching the position of fixtures in surgery, still do not hold their place unquestioned; for when such men as Hamilton hesitate to do them honor, one must consider their claims as not altogether proven.

We now come to surgery proper. In treating injuries of the head, surgeons have found that trephining the skull over the fissure of Rolando will alleviate paralysis of traumatic origin. This, however, has not been established by enough clinical experience to say that it is always the case; for it is a noted fact that compression of many other parts of the brain will cause a loss of motion.

A great deal has been said and done by the physicians of this country about the proper treatment of pleuritic effusions, but nothing new has been accomplished, and we are left to follow the old rules, which are to use an aspirator when the fluid is not pus, and to make a permanent opening by trephining a rib when it is.

A great deal has been done this year which goes to establish the tolerance of the peritoneal membrane when it is properly used.

Spencer Wells, in his retiring address, shows that there has been a steady decrease in the mortality from the operation of ovariotomy from the beginning, and that for the last two years it had been only ten per cent. Besides this, gastrotomy has been performed successfully for irreducible retroversion of the uterus producing intestinal obstruction; for intussusception of the bowel; for rupture of the uterus; and for extra-uterine pregnancy.

Dr. Battey's operation, of which we have heard so much, seems to be gaining ground. Marion Sims, in an article on the subject, says that it is almost impossible to remove the whole of the ovary through the vagina, and that there is nearly always a portion left behind. In order that the end for which the operation was instituted be reached, the whole of the organ must be removed, and that can be done far more satisfactorily by an abdominal section than by any other means. He then gives the statistics of the operation, which show that by far the greatest portion of those who have been cured by this operation are those on whom gastrotomy has been performed. He closes by saying that he believes the principle is a correct one, and that if properly used it will be a great blessing to humanity. In addition to these operations in which the cavity is closed, there are a few cases in which it has been left open to allow the drainage of cysts of the kidney and other organs which could not be removed.

The treatment of perityphlitic abscess has also been well discussed, and the conclusions come to, are to open the swelling by an incision of not more than two inches as soon as there is a probability of pus being found.

In the discussions of lithotomy, the fact that the mediobilateral operation suits more cases than any other operation, has been proved. Lithotrity has had a new chapter added to its literature by Bigelow, of Boston, who claims that repeated crushings and washings out of the fragments at a single sitting are far less dangerous than when the rough particles are left, to

keep up the irritation in an already inflamed bladder, which are again to be repeated as soon as the danger from the previous crushing has past. The comparatively new operation of laparo-elytrotomy is just now receiving a good deal of attention, and bids fair to a great extent, if not altogether, to supersede Cæsarean section. The operation consists in an incision from the symphysis pubis to the anterior superior spinous process of the ilium. This goes through the abdominal walls down to the peritoneum, which is dissected up from the transversalis fascia until the vagina is reached. This is laid open, the uterus is tilted to the opposite side, and the child delivered through the os and the incision. It is claimed that there is very little danger of peritonitis or of hæmorrhage, and that its chief danger is from cellulitis, which, from the free drainage which the incision affords, can not be as great as in ordinary cases of pelvic cellulitis. But as our experience with it is as yet very small, we are compelled to class it with Lister's dressing, and consider it still *sub judice.*

In urethral surgery Dr. Otis' views of the treatment of stricture have attracted unusual attention, but what the ultimate verdict of the profession will be, remains to be seen, though they are now regarded with favor.

The treatment of fractures has elicited the usual amount of discussion, but nothing new has been established. Suspending fractures of the femur has been practiced more this year than for many previous years, and its adherents claim excellent results for it; but the general opinion of the profession is that there will be more or less shortening under any method of treatment. The orthopædists have by no means been idle. One of the first improvements that we have to notice is the suture of tendons. This has been performed with such success in some cases that there was no union between the tendon and its theca; others in which they were bound together, yet have still given useful limbs to the patients. The treatment of sprains by massage is growing more and more in favor, and bids fair soon to be the fashionable treatment for a great many kinds of interstitial and serous effusions. Subcutaneous section of many bones which have been anchylosed or united at bad

angles has been practiced by a few surgeons, and the results which they give are quite encouraging. Dr. Hudson, of London, expresses the opinion that Syme's amputation gives the most useful stump of all the operations on the ankle joint.

Sayre's views of the treatment of Pott's disease have received a good deal of attention abroad as well as at home, and we may say with truth that they are meeting with almost universal approval.

This year has given to the world the first satisfactory result of an extirpation of the larynx that has ever been recorded. The one to which I refer is that of Dr. Foulis, of Glasgow. The operation was performed for a papillary sarcoma, which had twice been removed, but had returned as often. So far as the operation itself was concerned, it differed in two particulars from that of Billroth. First, as Langenbeck suggested, he did not remove the epiglottis, and second, instead of Trenlenberg's tampon, he used a long, bent lead tube, which was fitted into the trachea as soon as it could be cut loose from the larynx, and thus gave the patient air to breathe, which was received some distance from the bleeding surfaces caused by the subsequent steps of the operation. After his recovery the patient had a voice apparatus fitted to him, which was mainly the invention of Dr. Irvine. It is like a tracheotomy tube with a vertical tube fitted to its horizontal portion. The uppermost tube passes upward to the epiglottis, the lower one being fitted into the trachea. A vibrating reed is inserted into the lower tube. The voice is a monotone, but the patient varies it to suit himself by using reeds of different material, which give him a wonderfully distinct voice.

It seems to us that one of the principal improvements in ophthalmic surgery has been the introduction of drainage of the posterior chamber. This has been accomplished by Wecker, who claims that a fine catgut ligature passed through the vitreous humor, and tied in a loose knot in front of the ball, drains the eye and relieves the intraocular pressure far more effectually than tapping or iridectomy. He says that its bad effects are by no means what we might expect, for this substance irritates the eye very little, and in the course of a short time is entirely absorbed.

Time will not allow me to go more minutely into the progress of surgery, for we must now turn to the last division of the section. The one feature which has excited more debate than anything else in this field, is the pathology of joint disease. It will be remembered that our last discussion on this floor was on this very subject, and those who have followed up the literature of the subject since, will have seen that the ground which some of us then took has been amply sustained. I think that the ranks of those who hold that the strumous element has very little to do with joint disease are daily growing thinner. Among the curiosities in gross pathology, we find a case recorded of a patent urachus in an adult, and another of a woman who is still living after having a rupture of the uterus in four successive labors.

There has been a theory advanced that the cause of atheroma is the preponderance of the earthy salts in the blood, and quite a number of statistics have been given to uphold it, but what it is worth, time alone can show.

The microscopic examination of the ivory pegs, so often used in ununited fractures, shows that their absorption is accomplished by the formation of giant cells, which are in turn absorbed, or converted into true bone cells.

We now come to the work that has been accomplished in the field of new growths. The first theory that this year's labor has added strength to, is that epithelial growths are at first local diseases, and that they follow slight irritations. Sometimes the epithelial character is taken on by chancres, psoriasis, etc., etc. From some experiments with periosteum introduced into the jugular veins of chickens, Cohnheim and Maas have come to the conclusion that the reason that tumors of any sort become general, is that after a while the constitution loses the power of destroying and absorbing the foreign elements which are constantly introduced into the blood from growths of every description. They claim that no tumor is in itself malignant, but that it becomes so only when it affects an individual whose resisting capacity is reduced below the normal point, and that it is at the passage of this point where tumors which have been long stationary begin to grow, and where metastic formations show themselves.

The clinical history of sarcoma has been more closely analyzed this year, and the conclusion come to in regard to their elevated temperature is, that it is produced by the increased chemical action caused by the rapid growth of the tumor, and not from the constant congestion of its tissues, as was once supposed. One curious case of sarcoma has been put on record this year, in which Dr. Almstrosa, of Upsala, attempted to remove a tumor from the neck, and found it to be so adherent to the deep structures as to make it unsafe for him to proceed. He removed a small portion for the microscope, and closed the wound. It proved to be a sarcoma, which from that day on decreased rapidly in size until the sixth week, at which time the patient left the hospital with scarcely a trace of the tumor left.

A case of noma was reported to the Royal Medical and Surgical Society, in which high powers showed amœboid bodies in the blood before death. After death a careful examination showed these bodies in every fluid, but in great abundance at the seat of the ulcer.

Cats, mice, and other animals which were inoculated with the blood and secretions, died in a short time of peritonitis. Most but not all of them showed the development of these same bodies to a greater or less extent. Whether this case marks a new era in pathology, and is to stand first on the list of the statistics which are to demonstrate that we have found the true cause of noma, we are unable to state. But we do feel safe in saying that surgical pathology is steadily advancing. It has taken many years of patient toil to develop what we now know, and it will probably be many more before the process of analysis is anything like complete; but we believe that the day is coming when the isolated facts that have been brought out will be bound together in a harmonious structure, and that the generalizations of synthetic pathology will place this branch of knowledge among the most exact of all the sciences.

In closing, we must state that the conclusion to which we have been forced from the close study of the literature of the past year, is that the future progress not only of anatomy and pathology, but of physiology, biology, and of all these kindred sciences, is not to be looked for in the advancement of any one

to the exclusion of the others; but that they must assist each other and advance as one if not the greatest division of human knowledge. The generalizations which are to come from this powerful combination will not only give us incalculable assistance in the treatment of disease, and increase our power to alleviate the woes of this life, but by increasing our knowledge of this portion of the universe, will better fit us for our work beyond the vale.

ECLECTIC DEPARTMENT.

"Carpere et colligere."

ART. I.—*Some Reasons why the Microscope should be used by every Physician.* By JAMES TYSON, M. D., Professor of General Pathology and Morbid Anatomy in the University of Pennsylvania; one of the Visiting Physicians to the Philadelphia Hospital, etc.

In the present state of our knowledge, it is not required to prove the necessity of the microscope in the study of anatomy, physiology, and pathology—in biological science generally—and as an aid to accurate diagnosis. But while all acknowledge this, there still are those who do not admit its necessity to every practitioner. The notion prevails, that to the physician in the country the instrument is not at all necessary; and that in the cities there need be but a few acquainted with its use, to whom others can resort in the rare occasions demanding it. Apart from the fact that these occasions are far from being rare, it is evident that such a practice will result in frequent omission of a use of the microscope, when it might have been most advantageous. For, however willingly the few qualified may lend their assistance, causes constantly arise to prevent it. In some instances young physicians may not feel at liberty to ask assistance; in others there may be such delay that the characters of the object to be examined have become altered, or the disease itself may have changed, so that like products are not obtained, and thus the desired aid is lost. A repetition of such circum-

stances, and a feeling of reluctance repeatedly to call upon the microscopist, will cause many cases to terminate unexplained, or imperfectly understood. And as to medical men who reside at a distance from the cities, they are altogether cut off from facilities to which they are properly entitled, and without which they are often unjustly compelled to take rank below those more favored, and resort to them for consultation upon points which, with suitable means, they would be amply qualified to decide.

But it is not altogether the fault of the student of medicine that he is unacquainted with so important and indispensable an aid to medical practice. He can hardly be expected to appreciate the microscope when he looks in vain for any allusion to it in the curriculum of the school of his choice. Much less does he find any knowledge of it required in the final examination. Very reasonably, then, does he infer its secondary importance, even though he may have heard much concerning its utility; and, already oppressed by what *is* actually required, he, probably, gladly excuses himself from any further attention to a matter without knowledge of which he may still become a doctor.

Such a state of affairs is, I am glad to say, passing away. In the British medical schools—in London, Edinburgh, Glasgow and Dublin—the use of the microscope is now not only regularly taught, but the student's knowledge of it is tested in examination. To go back more than ten years, at the second examination for the degree of B. M., Oxford, December, 1865, we have the following questions: Describe the general appearance and microscopical structure of a lung affected by pneumonia, discriminating between the several stages of the disease? Mention the best known varieties of pityriasis, and describe their microscopical character? What indications for treatment do you gather from microscopical examinations of urine? Examine and write an account of the urine marked A and the fluid marked B in the clinical room? These are all simple, but most important questions. Yet how few recent graduates of American medical schools are able to answer them!

On the continent of Europe, laboratories of normal and pathological histology form a part of every university. All pupils

are required to be practical workers with the microscope, to be able not only to recognize disease where this depends upon its use, but to make elaborate preparations illustrating the minute anatomy of normal and diseased structures; while original observations in these directions often emanate from the undergraduate.

In this country most of the teaching in this direction is confined to private instruction, and that only in the largest cities. So far as I am informed, it is only in the Harvard Medical School, and the University of Pennsylvania, that laboratories for instruction in practical histology, normal and pathological, are found constituting an essential part of the medical course.*

It is, therefore, evident that most that medical men know of microscopy is acquired after they leave college, and as a result of their individual efforts, aided by such assistance as they may derive from a few books upon the subject; efforts which are tediously prolonged, and often end in discouragement, because those making them lacked the guiding hand or directing word which would quickly put them upon the right course.

Among the most important results to be expected from an increased familiarity with methods of minute investigation in common with all thorough medical education, is the tendency it must have to discourage charlatanism. The thoroughness of preparation which is involved in such methods of study is all-powerful in preventing many of our own number from sliding away from rational practice, and yielding, in the hour of disappointment, to the demands of an ignorant and prejudiced community. In the accurate knowledge thus obtained those whose practice is based upon exclusive dogmas are always deficient. And it has been my privilege, more than once, to have known young men who commenced the study of medicine (imbued with doctrines of homœopathy) who promptly threw them

* In the new curriculum in the Medical Department of the University of Pennsylvania the matriculate is taught the use of the microscope and normal histology, including the preparation of specimens, making sections, etc., in the first year of the course; and in the second year, pathological histology is similarly taught in the pathological laboratory. The microscopes required for this teaching, fifty in number, are furnished by the institution.

aside, as, under the influence of accurate teaching, they began to appreciate, first, the precise structure of organs, then the true nature of vital acts performed by them, and the modifications which these undergo through the agency of drugs; proving that unprejudiced men of intelligence can not conscientiously continue to accept dogmas so entirely opposed to truth as it actually exists in nature.

It is true of microscopy, as of all other sciences, that its results have not attained their present certainty without many serious errors, the absurdity of which did not at first appear. Here, as elsewhere, erroneous observation has been made the starting point of false theory. Indeed, it is evident that the microscope, through its magnifying power, is peculiarly adapted to furnish data which, if misconceived or misinterpreted, must lead us far astray in any theory based upon them; so far, indeed, as to render necessary, for the ultimate determination of truth, an amount of labor many times as great as would have sufficed in the first instance, had the original observations been accurately made.

Too much stress, therefore, can not be laid upon *interpreting aright* what is seen. Here it is well for the student of microscopy, at the very outset of his studies, to familiarize himself with some of the causes of error, in order that he may be carefully on his guard against them.

One of the most important of these is *preconceived opinion* with regard to the subject under investigation, in consequence of which appearances are often twisted into consistency with it. Such subversion of the fact to previous opinion is not necessarily intentional. On the contrary, it is seldom so; the pursuit of science does not afford sufficient return to those who make willful misrepresentation their medium of success. But it is the unconscious influence of previous opinion to which I allude, and by which all of us are more or less controlled. Such tendency is diminished by extreme vigilance, and an exacting determination to see only that which is actually before us.

A *second* source of error is a *disregard of conditions under which observations are made.* No more striking instance of this exists than is afforded by the very simple one of the red

blood corpuscle, which, according to the earliest observers, was a circular disc resembling a piece of money; according to others, globular; to others, a disc slightly concave; and to others still, convex. All these appearances of blood corpuscles can be produced under different circumstances; yet there is now no difference of opinion as to the actual shape of these bi-concave discs.

A *third* source of many errors lies in *inexperience.* To obviate this the student has but to be patient, to examine and reëxamine the same structure under every available condition. He should not be eager to give an opinion until he feels that he has acquired habits of observation which will not only render it reliable, but spare him also the mortification of recanting what he may have considered truth. To a cultivation of such accuracy, the habit of recording the results of observations contributes greatly. In such record the object should be to describe only what is seen, without attempting to complete an imperfect picture. Especially useful is it to make drawings of what is seen, by means of the camera lucida, or other drawing appliance attached to the microscope, so that complete accuracy is secured.

Still more difficult is it to draw conclusions from what we observe, and it is only after long experience that we are justified in attempting this; and even those of the greatest experience, using the best instruments and observing the most rigid caution, sometimes make mistakes. Such an instance is furnished by Professor Rindfleisch, who, in the last (fourth German) edition, p. 85, of his Pathological Histology, makes the following statement: "The earlier editions of this text-book contained at this point the following passage, which may be considered an instructive example of a misinterpretation of an otherwise good histological observation:

"'If through this arrangement a structure of a higher order, somewhat comparable to the connective tissue stroma of the mucous membrane of the intestine, is produced, this is rendered still more striking by the occurrence of certain spherical bodies, which I must consider the lymphatic follicles of the new formation. These lie within the parenchyma, equally distant

from the larger vessels. Very fine sections, brushed out, easily convince one that a delicate reticulum, with small lymph cells embedded, forms the chief bulk of the round node. Toward the periphery these corpuscles adhere more firmly to the reticulum than in the centre, so that here usually exists a zone difficult to clear up. On each side is a lighter zone, which is penetrated by larger stellate cells, so that, in fact, only the demonstration of a communication of the body with the lymphatic vessels is wanting. In the meantime, I remind my readers that this demonstration is also wanting in the follicles of the tonsils."*

"On the other hand, I am now convinced that the lymph follicles described by me are identical with the miliary tubercles of fungous granulation more recently discovered and correctly appreciated by Köster."

Among the instances which illustrate the value of the microscope in the hands of the practitioner, may be mentioned the following:

First, as to Bright's disease of the kidney. It is absolutely impossible to make a certain diagnosis of these affections without recourse to the microscope—the detection of casts in connection with albuminuria being indispensable.

In renal calculus, while it is not always possible to discover the nature of the stone by the microscope, it becomes so in a large number of instances.

In affections of the bladder and pelvis of the kidney, I consider the microscope an essential aid to the knowledge of the disease. By means of it we are enabled to determine whether pus, which is a constant attendant of both, comes from the pelvis and ureters or the bladder; in the latter instance being generally accompanied by crystals of the triple phosphates and mucus, and in the former occurring alone.

In trichiniasis, or the disease in which the muscular system becomes infested with *trichina spiralis*, the microscope can alone certainly decide.

Many skin diseases can alone be diagnosticated by this means. Such are preëminently the vegetable parasitic diseases—*tinea*

* This is the text of the New Sydenham Society's Translation, page 128, volume 1.

favosa, characterized by the presence of the *achorion schonleini*, *tinea circinata*, *tinea tonsurans*, *tinea sycosis*, by the *trichophyton*, and *tinea versicolor* by *microsporon furfur*.

It becomes a matter of daily necessity to determine the nature of a morbid growth removed from a patient, and thus learn the prognosis of the case, whether the tumor is malignant and will return, or whether the patient may consider himself safe from any such danger, and thus be permitted to enjoy the life which would otherwise be dread uncertainty. This the microscope, in connection with improved methods of investigation, permits us to do with certainty.

In diseases of women the microscope has recently shown itself of signal utility in the hands of the writer; in this instance rather in proving the absence of disease in the woman. A married lady consulted my colleague, Professor Goodell. She had been treated for uterine disease by several physicians. But she remained barren, although she and her husband were exceedingly anxious to have children. It occurred to Professor Goodell that there might be some defect on the part of the husband, and he asked him to bring some of his spermatic fluid to me for examination. He did so, and on placing a drop under the microscope, instead of finding hundreds of spermatozoids, as I confidently expected, *not one* was present. Repeated examinations showed the same result. On inquiry it was found that the man had had an epididymitis after gonorrhœa some years back. How conclusive this result; and what other means could so definitely have settled the question?

The use of the microscope in medico-legal investigations is not generally considered work for the general practitioner, but rather for the expert; but if the physician were educated as he should be, there are few occasions in which its use is called for in such cases in which he would not be fully qualified to decide. Among these, the detection of spermatozoids in spots on linen, or in the mucus of the vagina, in cases of suspected rape, is among the easiest of tasks to those familiar with the use of the microscope and the appearances of these bodies. Little more difficult is it to determine the presence of blood by the recogni-

tion of its corpuscles, or the production of hæmin* crystals (hydrochlorate of hæmatin) and their subsequent recognition by the microscope. To discriminate human blood discs from those of animals possessing oval corpuscles is scarcely more difficult; but when it comes to distinguish human blood discs from those of other animals having corpuscles of similar shape, we come to ground on which even experts differ. There are certain corpuscles, those of the dog, the ape tribe, the hare and the rat, which so nearly equal in size the discs of human blood, that no one attempts to distinguish them. On the other hand, the corpuscles of the ox, horse and sheep are so much smaller than human corpuscles that some microscopists (and among these, Dr. Joseph G. Richardson, of Philadelphia, is preëminent) declare it possible to assert, if it is claimed that such and such blood is the blood of a sheep, horse or ox, that such is not the case. The writer has had the opportunity of comparing the corpuscles of some of these latter-named bloods mounted side by side with human blood corpuscles by Professor Wormley, and certainly there was such a marked difference that even a tyro could detect it. Whether, when, as is the case in practice, the comparison has to be made by measurements of the two kinds of corpuscles after age and exposure have produced their effects, it

* To produce hæmin crystals, a small fragment of the suspected blood stain, or a few fibres of the stained garment, are reduced to fineness, a quantity of pulverized common salt (not more than an equal bulk) is added, and thoroughly mixed with the former, on a glass slide, covered with a thin glass cover, and a few drops of glacial acetic acid allowed to pass under the cover. A gentle heat is then cautiously applied by a spirit lamp, until the acetic acid is partially vaporized. The slide is then allowed to cool, and if blood is present and the experiment has been carefully performed, numerous rhombic crystals of hæmin will be discovered by the microscope. The experiment is the more likely to succeed, the larger the quantity of blood used, but she skill in manipulation is shown in producing them with the minimum amount. The writer has obtained them in large numbers from one or two filaments drawn from a stain on muslin. This is by far the most certain test for blood, nothing else yielding these crystals by this manipulation. While it is not likely that anything else will be found in places where blood is likely to be present, which can be confounded with blood discs, yet the writer was once shown, by his colleague, Professor Wormley, a slide of circular spores so closely resembling blood discs that only the most experienced observers could distinguish them.

is safe to make the assertion claimed by Richardson, is another question; but the writer, with his present knowledge of the subject, might be willing to go so far as to say that such bloods are less likely to be the bloods of ox, horse or sheep, than human blood.—*Phil. Med. and Surg. Rep.*

ART. II.—*On the Non-Venereal Cutaneous Affections of the Genitals.* By JAMES NEVENS HYDE, M. D. [A Lecture delivered at Rush Medical College, Chicago, May 30, 1878.]

Gentlemen,—I desire to-day to consider briefly, and especially from the standpoint of etiology, certain disorders, non-venereal in origin, which affect a special region of the body—the integument of the external genitals. Among the reasons for thus studying collectively the diseases of this region, may be mentioned the circumstances which tend to impress upon it peculiar features, the characteristic mental anxiety they awaken in the patient—an anxiety which is generally out of all proportion to the local trouble—and the vulgar prejudice that these affections are necessarily of disgraceful origin. This last is allied to the wide-spread delusion that all chronic cutaneous disorders spring from the practices of immorality either on the part of the person or his progenitors. It is often a matter of vast importance to the welfare of the individual, the family, and society, that you should be able to pronounce with confidence upon cases of this character.

In the integument and appendages of the external genital organs we recognize all the anatomical elements found in the skin of other parts of the body, with the single exception of that modification of the epidermal cells which constitutes the nail. Often intensely congested at the moment of birth, the skin of this and the adjacent regions rapidly assumes the fresh tint, tonicity, and firmness of youth, to be succeeded by the pigmented, wrinkled, and relaxed conditions of later life and old age. In parts it is delicately fine and laxly superimposed upon subcutaneous connective tissue, as over the penis, and in

other places it rests upon a cushion of fat, as upon the mons veneris. Lymphatics and blood-vessels, nerves, sebaceous and sudoriparous glands, hair follicles, and contained hairs are supplied to it in abundance, and subjected to the influences which elsewhere operate to produce faulty innervation, congestion, inflammation, serous, purulent, hæmorrhagic, or plastic exudation, or the nutriment for parasites.

The function of these organs is largely, in the strict sense of this word, venereal, and such in truth are many of their diseases. I intend, however, by the term non-venereal to exclude from present consideration merely those of syphilitic or blennorrhagic origin. Looking at the others collectively, we might be disposed to classify them in some such way as this: (1) Those which exist indifferently in the genital and other regions of the body, including those which, as a rule, only when of general distribution affect the first-named locality. (2) Those which exclusively or by preference involve the genital integument. (3) Those which exist by preference elsewhere, but yet (in accordance with that law of exceptions for which we have ever to allow) are occasionally found in this region with and without other distribution. We might, for example, assign to the first class the exanthemata, eczema, intertrigo, urticaria, diseases of the sebaceous and sudoriparous glands, pigmentary and vascular anomalies, and the lesions produced by scratching to relieve pruritus—improperly named prurigo. Among those of the second class might be mentioned the scaly and incrusted forms of scrotal epithelioma called "the chimney-sweep's cancer," phtheiriasis pubis, elephantiasis of the penis, clitoris, labia and scrotum, herpes progenitalis, and a few of the sub-varieties of the affections of the sebaceous glands. And we might find illustrations of the last class in psoriasis, lupus, keloid, and a few of the diseases occasioned by animal and vegetable parasites.

But a classification of this sort, while it might aid in recalling the relative frequency with which these disorders occur in a special locality, would possess but little practical value. For in the first class named we have evidently included much the larger number of these affections, as well as those of most com-

mon occurrence; while in the other divisions we have merely named genital species of a large family (their titles only serving to indicate their site), or those which in this connection require no consideration. The practical inference from all this is very clear. In studying the disorders of this locality we have to investigate chiefly those circumstances which here tend to modify the course and characteristics of cutaneous disease elsewhere. We shall thus have a key to the solution of most of the diagnostic, pathological, and therapeutic problems presented. Since, then, it will be impossible for me to describe a tithe of these affections in one hour, I ask you to limit your attention to the single portion of the field just indicated.

Among the most important of these modifying influences are heat, moisture, and friction; and I do not know how we can satisfactorily separate the three. For the natural temperature of the genital region is elevated by friction between contiguous tracts of integument, and between the latter and the clothing. This fact was recently well illustrated by Dr. Sellerbecker,* who by friction induced axillary temperature in his own person from 107° to 114° F., having observed similar curious results in a female patient detected in attempts at malingering. Again, friction in the genital region produces more or less moisture, due to the stimulation of the secretion of the glands, while at the same time the effect of the elevation of temperature will largely depend upon the degree of coëxisting moisture. Picture to yourselves the exuberant vegetation of a South American forest, and you will find an illustration of the potency of these great natural forces. But you will have a more homely illustration in the effects produced by the application of a common poultice. A cataplasm is valuable in proportion as it is moist and hot; any medicament it may contain plays a secondary rôle.

It is heat and moisture which supply the chief characteristics of mucous surfaces. When these surfaces cease to be normally warm and moist (for example, the envelope of a completely prolapsed uterus or of a long-exposed external hæmorrhoidal

* Berliner Klinische Wochenschrift, April, 1878.

tumor) they approach in condition the outer skin. And so, *per contra*, the outer skin, subjected to heat and moisture, will exhibit such quasi-mucous surfaces as we sometimes see where the scrotum or labia come in contact with the thigh, at the peno-scrotal, scrota-perineal angles, etc.

Now, as a rule, in cutaneous diseases of the genital region the skin and its lesions present either the features distinguishable after the application of a light poultice, or those of mucous or quasi-mucous surfaces. Eczema here is, as Vérité sententiously remarked in 1875,* a "dry disease in a humid locality." Erythema is distinct; discharges are due to gland secretion; crusts infrequent, always delicate, yellowish or grayish in hue, rarely greenish-black, horny or bulky. Infiltration and œdema are common complications. Vesicles and pustules rapidly change in appearance, the moistened roof-wall speedily removing by friction with the clothing or the fingers in scratching, leaving floor relics, from which a diagnosis must be determined. Often papules form from the resorption of their contents. Yet not infrequently these persist, just as we may see typically-maturing vesico-pustules of variola upon the velum palati. Ulcers and fissures often extend to the derma, not generally of the dry and deep variety seen in eczematous fissure of the hands, for example, but fissures which are wide, moist, and discharging. Papules are small, their summits frequently torn by the nails, or, when large, are broad, with flattened apices, rarely acuminate and projecting. The macerated epidermis, once removed, is irregularly reproduced, readily abraded or excoriated, and apt for the transudation of those acrid, sweat-containing, mucoid fluids which are characteristic of intertrigo. Urticarial wheals in this region are less fugacious than elsewhere, and tend to recurrence and chronicity.

Under the influence of heat and moisture, the parasite which produces ringworm of the body, the tinea trichophytina, often luxuriates in the genital regions, its visible effects isolated or superadded to other morbid conditions. Usually, as you know, the so-called eczema marginatum occurs upon the internal face of the thighs, where a peripherally-extending, elevated ring,

* La France Médicale, June 26 and July 3, 1875.

made up of small papules or vesicles, or the sequelæ of either, incloses an unaffected centre. Hebra, Bärensprung, and others have noticed these lesions extend to the mons veneris, scrotum, penis, and external surface of the labia majora. I have, on several occasions, seen these itchy, scurfy rings upon the scrotal surfaces in contact with the thighs. In hot climates the same causes operate to produce the exaggerated conditions variously named Malabar and Tokelan itch, Burmese ringworm, etc. These are usually considered to be non-venereal disorders, but in one case, that of a gentleman who contracted his disease (ringworm of the scrotum and thigh) when visiting the late Centennial Exhibition in Philadelphia, the patient asserted that it had been acquired by suspicious intercourse, and I could not deny such a possibility.

Pruritus is nowhere more intensely distressing and obstinate than in the genital region. This is, of course, in large degree dependent upon the abundant supply of peripheral sensory nerves to the parts, but the severity of the attack is enhanced by friction and heat, especially the latter. Indeed, the self-suggested and self-applied remedies of most patients are intended to "cool" the affected surfaces, thus supplying us with a hint as to the appropriate therapy. The well-nigh irresistible inclination to scratch the integument is generally exaggerated at night when the body is covered with bed-clothing, and adds the wounds of the finger-nails to any preëxisting lesions. In pruritus there is really no lesion, save that induced artificially, a fact frequently illustrated in practice. Thus a lady, sixty years old, exhibited to me the external genitals covered with minute, summit-torn papules, seated upon a reddened, excoriated, and weeping surface. Once effectually protected from the attacks of the fingers, the epidermis healed, but the disease was not at an end, for I had an opportunity of observing her afterward in what was a convulsive paroxysm of intense severity. She reclined upon her back, and the attendants restrained her hands from contact with the seat of the disease, but yet by the eloquent expression of her fingers as well as by her posture she indicated what a luxury it would be to bury her nails in her own flesh. The pruritus was a reflex result of one of the disorders I shall

mention later. A gentleman, similarly affected, once told me he could think of no instrument so serviceable for his purposes as a steel-toothed rake. Paroxysms of this character are usually relieved for a time by the slight serous discharge, solicited by friction of the wounded surface. The luxurious sense of relief thus afforded is dangerously allied to the sensation of sexual orgasm; and it is important for you to remember that in both sexes violent scratching of the genitals is liable to be followed by seminal or mucous discharges and the establishment of habits which are as degrading to the moral as to the physical nature.

The sensation of itching is a strongly-marked subjective symptom of most cutaneous disorders in this region. Patients with herpes progenitalis often attempt to allay the burning and smarting pain by squeezing the glans penis between the palms of the two hands. In this affection small, short-lived, and often abortive vesicles are followed by hyperæmic patches of corresponding size, crusts, excoriations, and even superficial ulcers, which readily heal when gently stimulated and protected. The contact of a congenitally tight, adherent, or redundant prepuce may be at fault here; and Dr. R. W. Taylor, of New York, and myself have relieved recurrent attacks of this sort by circumcision; but I have seen Jews, who had undergone their ritual of infancy, suffer as much as the uncircumcised.

With the friction due to clothing should be considered that arising from other mechanical contacts. Thus we find effective, in the adult, the saddle of the horse; in youth, the velocipede; in women, improperly adjusted napkins, pessaries and supporters with a vicious, extra-vaginal stem; in both sexes the truss, and in males the wearing of the suspensory-bag and the urinal. I have known each of the articles named to be efficient in the production of very disagreeable results. In males the constant wearing of the urinal requires that the penis and often the scrotum be habitually incased in oiled or rubber cloth. A young man with congenital malformation of the spinal cord in the lumbar region, accompanied by incontinence of urine and fæces, recently showed me large pemphigoid bullæ of the skin of the penis, with sodden and macerated walls, containing an ill-con-

ditioned serum. Again, the opening for the penis in the ordinary suspensory-bag is often so small as to compress the organ injuriously, leading to œdema and congestion of the pendulous portion. This is a matter worthy of note, because patients with cutaneous lesions of the penis and scrotum will often apply to themselves a suspensory-bag, which aggravates the original disorder, especially if the capacity of the purse and its orifices be reduced by a lining of lint. Other injurious appliances are surgical plaster awkwardly applied in strapping the epididymis, bandages and wrappings tightly embracing penis or scrotum and secured in place by string, thread, tape, or an elastic rubber band.

Though we have not the time to-day to discuss the treatment of these affections, I should remark here that for cutaneous troubles the female genitals are best dressed by the ordinary napkin or T-bandage, and the male by attaching a sufficiently long under-apron of muslin or other material above to the front of the under-clothing at the waist; it is loosely gathered up below and received into the drawers. This may include a rag saturated with a lotion or spread with an ointment or material to absorb discharges, which can be burned and replaced by a fresh piece at each dressing.

The injudicious employment of topical medicaments often enhances the severity or prolongs the course of otherwise simple disorders. Symptoms of insignificant import alarm ignorant people, who attempt to "burn out" the disease with vesicating collodion, nitrate of silver, nitrate of mercury, sulphate of copper, strong solutions of bichloride of mercury, and even nitric acid. I could illustrate the action of each with a case, and should add that too often the druggist is culpable. To this category belong the toilet soaps of the cheaper kind, highly scented, but containing small particles of bone or other irritating ingredients; and some of the toilet powders sold in the shops, adulterated with arsenic and other deleterious substances. It is the delicate and sensitive ano-genital region of the infant where the effects of these are best illustrated.

An exceptional history was recently narrated to me by my friend, Dr. John Bartlett, of this city. A bridegroom of twen-

ty-four hours was suddenly seized with painful vesiculation of the entire ano-genital region, and enormous œdema of the scrotum and penis. When the physician was summoned he found the indignant bride writing a letter to her parents, begging them to remove her forever from her unworthy husband of a day. Very close questioning of the latter elicited the fact that, while approaching the city on his wedding tour, too modest to make use of the accommodations in the Pullman car, he had gone for a stool to the sheltered rear of an isolated way-station house. Unprovided with other material, he had there applied to the anus the glossy leaves of a neighboring vine. Without question this was some variety of the rhus, probably the rhus toxicodendron, the induced eczema, in connection with the history, pointing to such a source.

Some of the ingesta may have similar local effects. Punctiform scarlet erythema, often mistaken for genital syphilides, is induced in some patients by the administration of copaiba. The sensation of itching may be occasioned by opium; the strangury of cantharides congests the genitals in both sexes. A physician, resident of this State, recently complained that he had "the itch." On examination I found acneform pustules involving the sebaceous glands of the pubes, and discovered, by my questions, that two months before he had been rendered insensible by a missile which struck his head. He had relieved the subsequent pain by taking potassic bromide in large doses, and when this remedy was withdrawn the eruption disappeared.

Negligence of the simple laws of cleanliness, potent for mischief everywhere, is here of great significance. The secretions of a local hyperidrosis, especially if dyed flannel be worn next the skin; the healthy urine of the infant; the decomposed urine from the fistula of the adult (left upon the skin or the clothing); feculent relics of a former stool; restrained menstrual and lochial discharges; serous, purulent, and bloody evacuations from the great natural outlets of the body in this vicinity, when not removed by the sponge, are capable of inducing disease of the integument. Rarely have I seen more formidable genital ulcers than those of a young mother, nineteen years of age, who had been forbidden by a grossly-ignorant midwife to cleanse

the passages for two months after delivery. It should be added that the careful drying of the external genitalia of the infant after its bath is a matter of importance, as a few drops of water left in contact with the skin may give rise to much trouble.

Many of the disorders we are considering are the direct or reflex results of changes in such important neighboring organs as the rectum, bladder, uterus, ovaries, prostate, testes, etc. Hæmorrhoidal tumors may excite first anal and then genital eczema; urticaria in the child may depend upon ascarides in the rectum, and I have seen genital eczema of the adult due to the same cause. Erythema papulatum of the labia is often associated with non-specific ulceration of the collum uteri. Pregnancy may occasion the numerous small, round, dull-red papules or slightly elevated, crimson patches which the gynæcologists call follicular vulvitis. Cancer of certain of the organs named may involve the skin, or induce secondary changes in it. Surgical deformities, diseases, and operations are not to be forgotten, as erysipelas and every stage of dermatitis to gangrene may follow external urethrotomy, prostatic abscess, urinary infiltration, varicocele, hernia, fistula, extrophy of the bladder, and prolapse of wound and bowel.

Irregular, perverted, or excessive performance of function requires mention. Here, to be healthy, physiological and not absolute rest is requisite—rest that results from regular and temperate satisfaction of desire. Hence, sexual excesses of all kinds, onanism and pæderasty, may lie at the foundation of even so simple a disorder as herpes. Vague neuralgias, originating in this way, are often mistaken for the pain of some local disorder of the skin. By heightened color alone the skilled eye can recognize recent immoderate and often moderate use of the genital organs. I recently treated a newly-married man for psoriasis, who candidly admitted his infraction of the laws of sexual hygiene. Two abundantly scaly patches, fully three centimetres in diameter, with distinct outline, showed upon the sides of the scrotum, while a curiously regular, scaly ring surmounted the reddened and puffy lip of the prepuce. Elsewhere in his person the disease was present in smaller patches, and this was the most remarkable, because in the diffuse forms of psoriasis, when

patches as large as the palm of the hand are to be seen upon the body, as a rule only the punctate or guttate forms are to be distinguished upon the genitals, and these characterized by less active scale formation.

Bromidrosis, as well as the odor from the genital sebaceous glands and anus, may in some instances be associated with cutaneous disorders of these parts. It has occurred to me that some of the animal parasites for this reason avoid the genitals. The cimex lectularius attacks the buttocks, the belly, and the thighs; rarely the labia, the penis, and the scrotum. Alone of its industrious family, the pediculus pubis exhibits a preference for this field. The sarcoptes hominis, whose inroads occasion scabies, is found upon the genital region in infants, the parasite being transferred to this locality by the hand or arm of the nurse, upon which the child rests. When discovered on the penis of the adult, it is probably due to the handling of the organ, as the difference in the modern dress of the two sexes in civilized countries permits readier access of the hand to the genitals in the male than in the female. For, in woman, the mammary region is more often the seat of scabies than are the genitals. But these accidents will soon be a matter of tradition in Chicago, as here the disease is more and more rarely encountered. Professor White, of Boston, has called attention to its progressive infrequency in his city (but eight cases were reported in 1875 among the out-patients of the Massachusetts General Hospital*); and it is my belief, based upon experience, that in Chicago, with its larger and extensively foreign population, a relative proportion of such cases could not have been collected in the same period.

Disorders of distant organs and of the general economy may excite general pruritus and lesions. Among these are the condition of sub-oxidation of the products of digestive metamorphosis, gout, rheumatism, hysteria, gastro-intestinal and hepatic derangements, malaria, struma, Bright's disease; and, last but

* Analysis of Five Thousand Cases of Skin Disease. Reprint from the "Boston Medical and Surgical Journal," 1876. Consult also Variations in Type and Prevalence of Skin Diseases, by the same. Transactions International Medical Congress, 1876.

not least, the faulty innervation, faulty hæmatopoësis, and faulty propulsion of blood currents, which are the significant symptoms of advanced senility.

A few diseases of the skin in this region appear to have no relation to the agencies we have considered; for example, the little, round, split-pea-sized, whitish or waxy tumors occasioned by disease, and the cysts formed by distention of the sebaceous glands. Occupying also a middle ground, between the venereal and non-venereal lesions, are the coxcomb or cauliflower excrescences, from a pin-head to a hen's egg in size, known as venereal warts. Often, indeed, these are implanted and nourished by virulent juices, but I have, in a few instances, removed them from honest farmers, who were never open to the suspicion of marital infidelity.

Lastly, I call your attention to the singular misconceptions of those entirely healthy individuals who are tormented with the idea that they have cutaneous genital disease. Diday* has well described their mental condition. To the adolescent the genital apparatus becomes instinctively a source of interest, which may degenerate into a painfully morbid solicitude. By such, the dark border of the corona glandis is thought to denote incipient gangrene; the large, hairy follicles of the scrotum are mistaken for pustules; the myrtiform caruncles for excrescences. These patients should be treated neither with contempt nor ridicule. It is the part of the physician to instruct as well as to advise.

The therapy of the disorders we have hastily reviewed is that which you have learned in connection with the special study of each, guided by a knowledge of the important factors which engender or aggravate the genital varieties.—*Bost. Med. and Surg. Journal.*

Rules for Chloroform Administration.—Professor Syme had given chloroform, he said, for many years without an accident. He attributed his success to two causes. First, he always used good chloroform; and second, he always gave plenty of it.

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* Thérapeut. des Malad. vén. et des Mal. cutanées. Diday et Doyon. Paris. 1876.

ABSTRACT DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."

CONDUCTED BY EDWARD MILLER, M. D., LOUISVILLE, KY.

Chronic Alcoholism. By Prof. W. H. Thomson, M. D., of New York.—The patient complains of great weakness of the limbs, not confined to either side of the body, a general debility, in fact, and has a good deal of tremor with it. It is not the tremor of paralysis agitans, because that has a characteristic gait, caused by the patient throwing the body forward, so that he walks on his toes. As the patient does not lift the feet in shaking palsy, he has a shuffling walk, and the soles of the shoes give out first at the toes. The head is carried erect and looking steadily forwards. On the other hand, if there is commencing locomotor ataxia, the patient puts his heels down first in walking; while, if there is paraplegia, the patient walks with a "spreading gait," as it is called, so as to have a broader base to support the body. In hæmiplegia, the foot upon the affected side is brought around with a swing in walking, and in well-marked cases describes a semi-circle. The paralysis of chronic alcoholism is not local, as in these diseases, but is of a general character. Nor is the tremor violent, being more like that of old age. There is loss of appetite, and the patient can never eat a full meal. The symptoms of delirium tremens always depend to a great extent upon previous starvation, and hence also the atrophy which invariably accompanies chronic alcoholism, is due to abstinence from food. There is also flatulence, and the patient is troubled with constipation. Even if there is a movement of the bowels every day, it will usually be found that the evacuations are scanty. An invariable symptom is poor sleep. It is poor in two respects. In the first place, the patient is unable to get to sleep for a long time, and when asleep, is troubled with unpleasant dreams. Then, again, there is a sense of falling, which often precedes alcoholic epilepsy; a form of epilepsy in which the mind gives way more quickly than any other. The cough is peculiar, in that it is usually laryngeal, and is due to irritation of the epiglottis. Chronic alcoholism,

up to a certain point, is curable, but when the mind has begun to be affected, the prognosis is exceedingly bad; for insanity, once having shown itself, is almost uniformly fatal. When meningitis comes on suddenly, however, in consequence of some debauch, the prognosis is more favorable. If epilepsy sets in, the patient is in a very bad way, for this form of epilepsy is worse than any other. These patients are sensitive about saying they are at all intemperate, and not infrequently deceive themselves, for they seem to think that if they do not get drunk, alcohol is not injurious.

The first essential in the treatment is to get the patient to stop the use of alcohol at once and forever. For the tremor, the oxide of zinc acts almost as a specific. It is, moreover, soporific; cures the gastritis and improves the digestion. Finally, it is important that the patient should eat, and milk is often the best form of diet. Food is the antidote to alcohol, and if an individual drinks only when he eats, he will never become a confirmed drinker. Drinking between meals, and especially early in the morning, does all the mischief.—*Philad. Medical Times.*

Study of Diseases of Women. By Robert Barnes, M. D. According to Dr. Barnes, the fable of Menenius Agrippa was not more true in its application to the body politic of Rome than it is to-day in its application to the body of medical science and to the body of man or woman upon whom the medical art is exercised. The body is a whole, made up of mutually dependent parts. The indivisible unity of the parts of the body is seen in the circulation; blood goes to every organ. If any organ is disordered, there results infallibly derangement, which affects the whole mass of the blood. Again, the nervous system is a whole. Disturbance of an organ entails nerve disorder, and the whole organism feels the blow. Disease may be, in its origin, local or general, but whatever the original disease, be it local or general, the whole body is liable to be affected, and each individual organ disordered in its function. For example, if cancer affects the uterus, the disease will produce certain variations, according to the nature and importance of

the functions of the organ first attacked, and to the nature and importance of the functions of the immediately associated or adjacent organs. This, then, is the key to the special pathology of the ovaries and uterus. But inasmuch as the ovaries and uterus have special functions to perform, and have particular relations with other organs, we have to investigate the pathology of the ovaries and uterus from distinct, special points of view, medical and surgical. Now, this study, although better appreciated than it was formerly, is still too much neglected, and there are still men of deserved eminence who seem to think that the domain of pathology is limited by a line drawn between the anterior superior spinous processes of the ilia; a deplorable error, pernicious in its consequences. It retards the progress of general medicine. Many of the most interesting problems in general pathology, as fever, thrombosis, acute jaundice, glycosuria, albuminuria, pigmentation, convulsions, chorea, and other nervous disorders, will be found in the study of menstruation and pregnancy. In the whole range of physiology and pathology no such instructive opportunities of studying the play of the excito-motory system are found. This luciferous source of knowledge is practically repudiated, and it follows that science and humanity suffer. Ignorance may be bliss, but it is not the best foundation of the healing art. This fragmentary medicine is the outcome of specialism. The real specialist is one who, fixing his attention upon one organ or tissue, ignores the rest; but he is scarcely less a specialist who specially neglects the conditions and reäctions of any organ in the body.—*Lancet.*

Lupus Exedens.—At a meeting of the Clinical Society of London, in May, Mr. Spencer Watson read notes of two cases of lupus exedens to illustrate Hebra's plan of local treatment by caustic. In one, where ulceration followed a kick in the face, solid nitrate of silver was freely rubbed in and iodide of potassium given internally. Cicatrization occurred in a few weeks. In the other, a thin, ill-nourished man, with the ulcers on the nose and cheek, the iodide of iron was used internally, and the solid nitrate of silver rubbed in every three days for about two weeks. In less than a month the patient was shown

to the Society completely cured. The ala of the nose being preserved with only slight narrowing of the nasal aperture. These cases illustrate the rapid improvement following the free use of caustics, antiseptic dressings, improved diet, and opiates. *Lancet.*

The Incubation of Mumps. By A. R. Manly, M. R. C. S.—Mr. Manly stated to the Norfolk and Norwich Medico-Chirurgical Society that he had been asked how long a lady, who had been thrown in the way of mumps, need fear lest she contract the disease. Mr. Manly having never paid much attention to the matter, hazarded a "fortnight," but was annoyed to find that the young lady had a severe attack of parotitis twenty-one days after exposure. Mortified at this, he consulted the authorities. Medical and surgical writers both describe parotitis; none of them mention the incubative period. Mr. M. thinks, therefore, his cases worth recording. The first, a young lady, aged eighteen, who, twenty-one days after calling at a house where mumps was epidemic, had a severe attack. Twenty-four days after a sister, and twenty-nine days subsequently a brother, were attacked. From these observations Mr. Manly concluded that isolation, to be effectual, should last a month or six weeks. *Brit. Med. Jour.*

A New Method of Compressing the Common Iliac Artery. By Richard Davy, M. B., F. R. C. S.—The American surgeons, with their characteristic ingenuity, devised pressure on the abdominal aorta for hæmostatic ends during amputations high up towards the pelvis. Lister arranged a horse-shoe clamp and screw-pad for compressing the aorta above the umbilicus. This mechanism was used in Syme's brilliant operation on glutæal aneurism, but in 1874 Mr. Davy suggested the possibility of controlling the aorta, common iliac, and internal iliacs, by pressure through the rectum on the true pelvic wall; a less serious procedure than compression of the aorta through the abdominal wall. On January 16, 1877, Mr. Davy had a fair opportunity for testing the suggestion, in a case of amputation at the hip-joint, in a boy aged nine, suffering from mor-

bus coxæ (femoral and acetabular) on the right side. The right leg and thigh were partially emptied of blood by Esmarch's bandage; chloroform was administered, and an ounce of sweet oil thrown up the empty rectum. A straight lever of wood (turned smooth and true in a lathe) was introduced per rectum, the small end was applied over the right common iliac artery between the lumbar bodies and psoas magnus muscle; the projecting part of the lever ran nearly parallel to the left thigh. The common iliac artery was readily compressed by elevating the projecting arm of the lever, the perineal tissues acting as a fulcrum. As the lever was elevated or depressed, so did the right femoral artery cease or continue to pulsate. The left femoral was undisturbed, beating with regularity throughout. The operation was performed by a long anterior and short posterior flap, the arteries tied, sutures inserted, and the boy placed in bed, with the loss of about a wineglassful of blood. The result was satisfactory. Mr. Davy has demonstrated that surgeons possess a new method of controlling hæmorrhage; he also claims that compression of the iliac through the rectum is less serious than compression of the aorta through the abdomen, more easy and reliable, less disturbance of the circulatory system, and no danger can result to the rectum from the lever, if guided by the hand of an expert surgeon.—*Brit. Med. Jour.*

Puerperal Goitre.—At the April meeting of the Bradford Medico-Chirurgical Society, Mr. Mossop, after referring to the literature of the subject and quoting Dr. Ollivier and Mr. L. Tait, described a recurrent variety of goitre occurring simultaneously with and under the stimulation of pregnancy. In this disease the thyroid gland slowly enlarged, caused no pain or disturbance of breathing, no exophthalmus; appeared with pregnancy and developed until delivery, when it began to diminish and slowly disappear, to reäppear in subsequent pregnancies. There was a connection between goitre and the uterine functions shown in the increase of the gland at puberty, and these were cases of a decided enlargement of the gland in menstruation. These cases differed from suffocative puerperal goitre, which were successfully treated by Lennox Browne, by

exciting suppuration in them by means of a seton. The induction of premature labor is suggested by the prompt relief afforded the patient by spontaneous miscarriage, an event that often occurs.—*The Lancet.*

The Movo-Amobile Dressing for Fractures. By Professor W. W. Dawson, M. D., of Cincinnati, O. Dr. Dawson predicts, with great confidence, that the movo-amobile treatment for fractures (the Boravian plan, as it is usually called), will supersede all others, and will be the method of the future. It is especially useful in compound fractures of the lower extremity. Dr. Dawson justifies his remarks by giving an account of a case, in which there was a compound fracture of the femur and of the leg, in which it would certainly have been difficult to have obtained the same success in any other way. This dressing consists of a splint made of doubled flannel, cut to fit the limb. The two thicknesses are united at the back by a double row of stitches to form a hinge, when the two layers are pasted together with plaster. The edges of the internal layer of flannel are sewed together in front of the limb, so as to fit accurately. The inner layer of flannel is then covered with plaster-of-Paris paste, and the external layer, being also covered with the paste, is brought together in front, and secured until the plaster sets. When hard, the seam along the front may be cut open, and the limb inspected at pleasure. Dr. Dawson gives the following reasons why this dressing is superior to all others. If applied when the fracture is properly adjusted, shortening can not occur. It fits the limb completely; it is the most movable and easily adjusted of all efficient appliances; it is the most comfortable; it allows the patient more freedom of movement; it allows frequent inspection of the seat of fracture without disturbing the fragments; it prevents undue swelling; it hardens in a few minutes; it permits traps to be easily made in it in compound fractures; and its cheapness. One-half of one dollar will purchase the materials for dressing a fractured femur. Finally, Dr. Dawson thinks that by this plan of treating fractures, short femurs will disappear and crooked limbs be no more seen in the land, to the disgrace and scandal of the profession.—*Cincinnati Lancet and Observer.*

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*Fracture of the Twelfth Dorsal Vertebra—Sub ligamentous Fracture—Male Surgical Ward Service, Louisville City Hospital.* E. VON DONHOFF, M. D., Visiting Surgeon. Reported by GEORGE M. CARNACHAN, M. D., Resident Assistant.

CASE I.—Pat. Macken, aged 40 years, a native of Ireland; occupation farmer; unmarried. He was admitted to the Louisville City Hospital, Male Surgical Ward, July 27, 1878.

Previous History.—On Friday, July 26th, whilst in an inebriated condition, he found his way into a tobacco warehouse in the city, and fell through an open hatchway, a distance of thirty-six feet, striking on his back.

Upon being questioned, the patient stated that after falling he crawled a considerable distance from the spot where he had fallen, being necessitated to drag his lower extremities on the ground.

Present Condition.—The patient is well nourished and muscular. He confesses to have been a drinker; he has an anxious expression of countenance, though his face is quite florid; complains of pain in the chest, especially marked on inspiration. The patient prefers lateral decubitus. Motion of the head and upper extremities is unimpaired; no fracture of clavicles or ribs; no difficulty in swallowing. Lower extremities paralyzed; no fracture or dislocation discoverable; pelvis intact. Examination of spine discovered very slight increase of dorsal curvature, but no angularity of the column. At a point corresponding to the spinous process of the twelfth dorsal vertebra, the finger discovered a depression. The introduction of an exploring needle revealed the presence of movable fragments of bone on the left side of the spinous process only. There was marked retention of urine with distension of bladder. The urine was withdrawn and found to be ammoniacal.

Diagnosis.—Fracture of the arch of the spinal canal through the lamina and through base of spinous process. The absence of angularity and its failure to appear when the patient was

moved, was regarded as plausible evidence of the absence of fracture through to the body of vertebra, or of disarticulation. Examination with the æsthesiometer indicated the absence of sensation from a point immediately below the site of fracture to the end of the lower extremities posteriorly. Anteriorly some sensation remained down to a few inches below Poupart's ligament.

Treatment and Progress.—In view of the unpromising nature of statistics bearing upon the active treatment of cases of this kind, operative interference would seem to have been positively contraïndicated. However, ancient authoritative advisers and modern operators of eminence, whilst deprecating favorable prognosis, still do not hesitate to mildly recommend surgical procedure. Sir A. Cooper speaks of the operation for the relief of bone pressure, due to fracture of the vertebræ lamina upon the spinal cord as one from which "great good may come." Because of the absence of objective symptoms indicative of fracture through the body and the readily demonstrable fracture through the lamina, in this case, it was proposed to the patient, after due representation of his extremely meagre chances of recovery, to make an operative effort to relieve him. His consent and that of his immediate friends having been obtained, an incision four inches in length was made down to the depressed lamina, which, together with the loose spinous process, was removed. The wound was closed with four deep sutures. A plaster-of-Paris jacket was now quickly applied, and the patient placed upon his back on a water-bed. One hour after the operation patient was free of pain, but complained of uneasiness about his chest. A most remarkable feature, if the testimony of the patient was reliable, was that he felt the prick of a knife near his knee, his eyes being held shut meanwhile. The same testimony was repeated some hours afterwards. At 1 A. M. (July 28th), temperature in axilla was 99°, though the surface temperature of lower extremities was much greater. The temperature in axilla remained stationary until patient's death, which occurred at 10:30. A. M. (July 28th). Mode of death—syncope (sudden) not marked by convulsive movements or other evidences of pain.

Autopsy.—The incision made at the operation was enlarged, and a part of the spinal column, including four or five of the superimposed (above the fracture) vertebræ and three below the fracture were removed. It was found that a sub-ligamentous disarticulation of the cartilage of the fractured vertebra had occurred, the cartilage carrying with it a thin lamina of the vertebra. This circumstance in all probability prevented the occurrence of angularity, a symptom almost universally present in fractures through the column. Added to this, it was found that the cord was completely severed; crushed in two; no examination of the viscera could be made.

Chronic Necrosis of the Cranial Bones resulting from Injury.—CASE II.—John Hickey, aged forty-six; born in Ireland; admitted to City Hospital July 2, 1877, for necrosis of cranial bones at the site of an ancient injury.

Previous History.—About two years before admission to the hospital, whilst a soldier in the city of Leavensworth, Kansas, was struck on the head by one of the guards with a shovel, and afterwards with a musket. Was taken to the hospital, where the wound was dressed, and where patient remained about eight days, the wound not having entirely healed at that time. Shortly after leaving the hospital, he traveled to New York on foot, thence back to St. Louis, thence to Texas, where he went to work on a railroad, and continued working until the spring of 1876, when he noticed an enlargement on the summit of his head. Patient now quit work and entered the hospital at Houston, Texas. Here an incision was made into the enlargement and a small piece of dead bone was removed. After the operation considerable inflammation, probably erysipelatous, supervened, and necessitated the patient's stay in hospital for one month. At the expiration of that time the patient left the hospital, but the wound was not healed. After leaving Houston he went to Galveston, and entered the hospital there, where he remained a month. Subsequently, he entered the hospital at New Orleans, remaining but a short time. Still later, he entered the hospital at Memphis. With the exception of the operation done at Houston, no surgical measures had been adopted in patient's case.

Present Condition.—Patient moderately well nourished and muscular; mental condition good generally, though at times patient is somewhat flighty; temperature normal. A little in front of the junction of the sagittal and lambdoidal sutures is a cloaca, exposing an area of about one square inch of carious bone. A probe introduced beneath the edges of the cloaca can be swept over an additional circumscribing area one-half inch in width. No opening into the calvarium can be discovered.

Treatment.—To-day (July 3d) the patient being fully anæsthetized, transverse and longitudinal incisions, describing vertical cross sections from either side of the cloaca, were made. A small trephine was entered at about the middle of the diseased bone mass, and the opening thus made utilized for the introduction of the sequestrum forceps, with which a piece of bone two (2) inches wide and two and a half ($2\frac{1}{2}$) inches long was wrenched with considerable difficulty. Lying beneath the diseased bone removed was a thick layer of cheesy, stinking pus. The under surface of the bone removed presented a very much eroded appearance. The fresh incisions were closed with sutures, and cold-water dressings applied. At 2 P. M., three hours after the operation, temperature 100; 3 P. M., 100; 4 P. M., 100; 7 P. M., 100; pulse 98.

July 4th.—Wound presents a good appearance; suppuration free and of a good character; temperature 98; appetite good. From this time forward until July 24th, temperature and pulse remained normal; appetite superabundant; wound granulated freely and healthily; suppuration scant.

July 24th.—To-day a portion of remaining dead bone was discovered, but no operative interference was practiced, in the hope that the sequestrum might become spontaneously detached.

July 30th.—The sequestrum not having become detached at this time, an incision about an inch and a half ($1\frac{1}{2}$) was made, beginning at the edge of the cloaca, extending downward toward the temporal bone on the right side, and another beginning at the same point and extending forward about one (1) inch. The flap thus marked out was raised, and one and one-half ($1\frac{1}{2}$) square inch of bone removed.

From this time forward until August 13th, temperature and pulse remained normal; appetite good; wound improved rapidly. At this time (August 13th) a small accumulation of pus was noticed near the occipital protuberance. An incision was made into this, and a small detached fragment of bone lifted from the opening. From this time forward to the time of patient's discharge, the wound cicatrized rapidly, so that when he left the hospital only a small, raw surface about the size of one's finger nail remained.

Resumé.—Perhaps the most remarkable case treated in the hospital during "the service" of Dr. E. von Donhoff, in the year 1877, is the foregoing one. The operation undertaken was formidable and venturesome. Luckily, the situation from which the extensive mass of diseased bone (six square inches) was removed was a comparatively less dangerous one than others about the cranium. A noteworthy feature about this case is a scarcely noticeable disturbance occasioned to the patient's general condition; no fever worth mentioning marked the case throughout its stay in hospital, and the patient's appetite was almost ravenous at times, and *always* good. The latter circumstance favored the case, and secured a recovery to this man from injuries resulting from violence and from extensive surgical operations which would have been fatal to most others.*

Acute Traumatic Hœmatocele.—John Mullen, aged thirty-two; a native of Ireland; laborer; admitted to the hospital June 20, 1878.

Previous History.—On the day preceding his admission, patient was injured by the explosion of a percussion cap immediately below the penis on the right side of the scrotum, the injury resulting in his present condition.

Present Condition.—The scrotum is intensely discolored by bloody extravasation, as is also the penis. Both are much swollen, the scrotum equaling the head of a new-born child in size. Fluctuation absent on left side, and though present on right, discovered with great difficulty only.

Diagnosis.—Acute traumatic hæmatocele of the right scrotum.

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* From the time of admission to his discharge, patient was subject to fits of mental aberration.

Treatment.—The scrotal sac was freely and deeply scarified, and warm fomentations applied. From this time forward (June 22d until July 12th) the patient improved very much as regarded the size of the penis and scrotum. The left scrotum had resumed its normal size and appearance. The right was also much reduced in size, so that it was no larger than a small goose egg. At this time (July 12th), the patient thinking himself sufficiently recovered, left the hospital without permission.

July 19th.—Patient returned to hospital in the following condition: Right scrotum somewhat enlarged; fluctuation readily discoverable; dark bloody serum oozing through a small puncture which had been made some time previously with a small tenatome; complains of considerable pain and heat. The further treatment consisted, first, in the introduction of a large-sized trocar and canula, which operation resulting negatively, was followed by a free incision into the sac, from the cavity of which a considerable quantity of black, stinking blood-clots were removed. The sac was washed out daily with carbolized water. In a few days the cavity was much reduced in size, and the purulent discharge from it scarcely noticeable.

On the 29th instant the extensive opening had healed, and the scrotum, beyond the presence of slight evidence of inflammatory infiltration, had resumed its normal size and appearance.

July 31st.—Patient discharged cured.*

PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

Michigan State Board of Health.

The regular quarterly meeting of this body occurred July 9, 1878, at Lansing, all the members being present.

The subject of a text-book on hygiene for common schools was discussed. No members of the board had seen a book suitable for such use, and it was thought very desirable that one be prepared.

* No febrile disturbance marked the case throughout.

Dr. Hitchcock then offered the following resolutions, which were adopted: "That this Board respectfully request the Board of Regents of the University of Michigan, and the Trustees of the Detroit Medical College, to establish in their respective institutions, at the earliest practicable moment, full chairs of public hygiene, and fill the same with thoroughly competent professors. That this Board respectfully request the controlling boards of all the collegiate institutions, as well as the high schools of the State, to see that a course of instruction in public hygiene be given in each of their several institutions."

Dr. Kedzie presented some results of his investigations on the subject of lead poisoning by means of tinned ware and other vessels containing lead.

The subject of sanitary conventions was considered; and after some discussion in regard to the kind of subjects to be treated and their mode of treatment, it was voted to hold such a convention at Coldwater, Mich., during the coming winter, being invited to do so by Dr. J. H. Beech of that city. The Secretary was directed to make the necessary preparations.

Invitations were also received from Rev. D. C. Jacokes and Dr. Lyster to hold conventions at Pontiac and Detroit, who, on behalf of the citizens of their respective cities, promised active efforts for the success of such meetings. One interesting feature of these meetings is expected to be the exhibition of all sorts of sanitary appliances, a kind of sanitary fair, where all interested can exhibit or examine articles designed to meet the wants of the people in their efforts for public and private health.

The Secretary presented a report of the work done in his office during the preceding quarter. Besides the regular work of preparation of manuscript for the reports, compilation of reports of diseases, distribution of postal blanks for weekly reports, ordinary correspondence, etc., a circular (28) had been prepared and sent to all health officers in Michigan (1,222 in all), giving them general suggestions in regard to their duties, and the obligations of local boards of health, as guardians of the public health.

A large number of copies of the Sixth Registration Report, compiled by the Secretary, had been distributed to the regular

correspondents of the Board, sanitary journals received as exchanges, and prominent sanitarians.

After the usual auditing of bills and accounts, the Board adjourned.

The next regular meeting will be held October 8th, 1878.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

The Constituents of Climate, with Special Reference to the Climate of Florida.

BY FREDERICK D. LENTE, A. M., M. D.

PALATKA, FLA., 1878.

NOTE.—This article is written in epistolatory style at the suggestion of the editor.—F. D. LENTE.

In a paper which I had the honor of reading before the American Public Health Association two years ago, in Boston, I made the attempt to enlighten the public, and especially the medical public, on the subject of the climate of Florida, its adaptability as a health resort, and especially to remove certain unfounded ideas and prejudices which have become wide-spread and deeply-rooted in northern communities. It is somewhat surprising that this should be the case with medical men, since positive information on the subject has always been accessible to them in the volumes of the "Medical Statistics of the U. S. Army," the "Army Medical Reports" and the "Reports of the Adjutant-General's Office," embracing statistics covering a space of more than forty years, which are, of course, thoroughly unprejudiced. They are particularly full of information regarding the meteorology and endemic influences of Florida. For some years past, however, a number of northern physicians have spent winters or portions of a winter in Florida, and the number is yearly increasing. The verdict of these has been uniformly favorable, as also that of the various surgeons of the army who have been stationed there, some of them for several years, during the Seminole war. The earliest visitors and the various

adventurers who landed on the shores of Florida, and who left us any written evidence of their experience and sentiments, have spoken in the most enthusiastic terms of her climate. The numerous writers on the subject in the present century have expressed themselves in a similar manner, and indeed it seems almost impossible to one who has lived several winters in Florida, in describing the beauties or the advantages of her climate, not to drift into the same strain. Something of it will be noticed even in the formal reports of some of the older army surgeons. But I propose to avoid this, and to deal with plain facts as far as possible, and leave my medical brethren to draw their own conclusions.

I am disposed to think that there is a desire for further information on this subject, from the fact that my first paper was copied entire or by large extracts in various journals, and that frequent inquiries are now made for the reprints, which were long ago exhausted; while a longer residence in Florida, and a more extensive acquaintance with those who have tested the winter climate for several years, will enable me to speak with more confidence on certain topics than I was able to do at the date of my first publication.

The question of climate is confessedly a difficult one to manage, and the amount of definite, practical knowledge which one is able to gather on the subject from the numerous publications, some of them quite voluminous, is very small. In truth, the more one reads and the more facts he gathers from various sources, the more difficult the task of collation and inference becomes, since these observations are so conflicting and the various theories so confusing that it seems well nigh impossible to deduce any valuable therapeutical conclusions from them. I have addressed myself to this task for the past few years; have studied all the works on Florida from that of Le Moyne, who visited it in 1564 as artist to the expedition of Laudonnière in 1564, to the latest accessible publications, including all the records bearing upon the subject in possession of the War Department, the library of the Surgeon-General and other depositories at Washington; have conversed with the Surgeon-General, the Assistant Surgeon-General, and other medical and line

officers who have been stationed in Florida, and who have had experience of both her summer and winter climate; with many of the scientific and medical residents in the State; with some of her representatives in Congress; and have had the opportunity, during the past three winters, of seeing and conversing with a large number of intelligent visitors and invalids who had, many of them, sought health in various quarters of the globe, and whose evidence regarding the comparative value of climates I consider more valuable than that from any other source; since they have no interest in any particular locality, except so far as it has been conducive to the object in view. Among these, when they have remained in Florida a sufficient length of time to form anything like an accurate judgment, there has been a remarkable unanimity of opinion in favor of her climate. The opinion of the hundreds who are scattered over the country, who have spent a month, or a few weeks, or one winter even in the State, going generally to only one point, is not worth taking into consideration; yet we have an abundance of contributions from this source in the Press of the country, and many form their judgment from these effusions. Florida has been poetically described as the "Italy of America." But those who have fully tested the climate of the various Italian resorts will consider it anything but flattering to Florida. If space will permit, this comparison will be further alluded to.

There are indications at present that our ideas on the intricate subject of climate are assuming a more definite shape, are becoming crystalized, as it were, around one central point, which, if true, will save us a good deal of perplexity and responsibility when we are asked by our patients the important question: "What climate will suit my case." Is there any special property of climate which we may seize upon as the test of superior fitness for our purpose as therapeutists? I have reference now to one disease—Pulmonary Consumption in its various forms. These indications are that the public and the profession are arriving at the conclusion that the climate which will offer the greatest inducements to invalids to be out in the open air, or which will enable them to breathe it constantly and without danger of chilling the surface, or, in other

words, that which furnishes the greatest *amount* of pure air, is, to speak in general terms, the one to be preferred, paying due regard, however, to the various constituents of climate which may influence the quality of the air. Let me briefly refer to several publications in the journals of three different countries, all falling within the last few months, for these straws show which way the wind blows. In an article in the November number of the "Popular Science Monthly," by Dr. Felix L. Osgood, entitled "Modern Troglodites," the author quotes the following from the report of the celebrated German surgeon, Langenbeck, on Small-Pox: "I have cut up more human bodies than the 'Old Man of the Mountain' with all his accomplices; and, speaking only of my primary object, I must confess I am no wiser than before. But, though the mystery of small-pox has eluded my search, my labors have not been in vain. They have revealed to me something else, the origin of consumption. I am sure now of what I suspected long ago, viz., that pulmonary diseases have very little to do with intemperance, or erotic escapes, and much less with cold weather, but are nearly exclusively (if we except tuberculous tendencies inherited from *both* parents, I say *quite* exclusively) produced by the breathing of foul air. The lungs of all persons who had worked in close workshops and dusty factories showed the germs of the fatal disease, while confirmed inebriates who had passed their days in the open air, had preserved their respiratory organs intact, whatever inroads their excesses had made on the rest of their system. If I should go into practice and undertake to cure a consumptive, I should begin by driving him out into the *Deister** (a densely wooded mountain range of Hanover) and prevent him from entering a house for a year or two."

* A thick belt of trees, and of the sun-flower plant will also intercept these germs. The eucalyptus has lately become especially the subject of experiment wherever it will grow. It is not certain whether it acts simply as a filter, like other trees, but more effectually because its foliage commences close to the earth, or whether the effect is jointly due to this and some specific influence in virtue of its remarkable balsamic odor; perhaps, in wet localities also, to its draining property. Its extraordinarily rapid growth necessitating a great supply of moisture from its roots.

The drift of the whole article is to prove, as he does by arguments and interesting anecdotes, many of them familiar perhaps to most of my readers, that dwelling as far as possible in the open air, whether cold or warm, and breathing it day and night, regardless of the bug-bear of "taking cold," is the only preventive or cure of consumption. In the same journal for December is an article by Dr. Paul Niemeyer, entitled "Open Air and Health." In this he speaks of certain "throat and lung complaints which we physicians are daily more and more clearly tracing to inhalation of impure, vitiated air." The burthen of his argument is fresh air and plenty of it. "The patient must keep the window of his bed-room open. Night air is fresh air without daylight; he who fears night air is like a child who dreads darkness. In a city, night air is always wholesomer than day air, being both purer and stiller." In a late number of the "London Lancet," Dr. Handfield Jones, an eminent English physician, gives remarkable clinical evidence from hospital experience of the great value of what he terms *hyper-ventilation;* that is ventilation of sick rooms carried far beyond what the great majority of us physicians, as well as non-professional persons, would consider judicious. The change in the aspect of cases, which were considered hopeless, from throwing open the windows of the wards, even in cold weather, was truly astonishing. Dr. J. Schreiber, of the Vienna Faculty, in a recent address before the Austrian Meteorological Society, translated by Dr. Geddings, of Aiken, for the "Richmond and Louisville Medical Journal," also calls attention to the same subject, and concludes by saying that "the term climatic," which has hitherto been employed to denote a vague, indefinite specific, of which no rational account could be given, appears now as something infinitely clear and very simple, being in fact nothing more than pure air uncontaminated by miasma, with no organic or inorganic substances, and one in which meteoric precipitation (rain) is not unduly deficient. He shows that it is neither warm air necessarily, nor cold air, nor dry air, nor moist air that is wanted, but *air* in abundant quantity.

I do not mean to say that there is anything particularly novel in the above ideas. Individual efforts in this direction have

been made for many years. Several years ago a physician in California would not allow his consumptive patients to sleep even in a tent, but put them to sleep under the trees in the dry, pure air of the locality where he resided. Dr. MacCormac, an English physician of note, insisted, many years ago, that if people would sleep with open doors and windows, there would be no consumption; the hyper-ventilation of Handfield Jones. This, then, is the key-note of the climatic cure of consumption, scrofula, and allied diseases. It is not wonderful that *air* should be so essential to the proper treatment of these affections, since a deprivation of pure air has long been recognized as the principal factor in their generation. It is hardly necessary to argue this point, but a few illustrative examples may not be out of place. In the report of the health of the Royal Navy for 1860, "accounts are given," says M. Simons ("American Journal Medical Sciences," January, 1872,) "of a form of congestive pneumonia of the apex of the lung, which had much the character of incipient phthisis, which was attributed to the overcrowding of the men in berths between decks, the hammock hooks being only fourteen inches apart. A great number of those who were invalided rapidly improved, when they were removed from the cause, and were able to rejoin the service." "In one instance, in the Dublin House of Industry, where scrofula was so common as to be thought contagious, there were in one ward, sixty feet long and sixteen feet broad (height not given), thirty-eight beds, each containing four children. The atmosphere was so bad that in the morning the air was unendurable." In some of the schools examined by Carmichael, the food was excellent, and the only causes for the excessive prevalence of phthisis were the foul air and want of exercise. This was the case also in the house and school examined by Neill Arnott in 1832. "Two Austrian prisons, in which the diet and mode of life were, it is believed, essentially the same, offer the following contrast:

"In the prison of Leopoldstadt, at Vienna, which was very badly ventilated, there died in the years 1834–1847 378 prisoners out of 4,280, or 86 per 1,000; and of these no less than 220 or 51.4 per 1,000 died from phthisis. There were no less than 42 cases of acute miliary tuberculosis."

"In the well-ventilated House of Correction in the same city there were in five years (1850–1854) 3,037 prisoners, of whom 43 died, or 14 per 1,000, and of these 24 or 7.9 per 1,000 died of phthisis."* It would be useless to take up space in multiplying these instances. But perhaps some of my medical friends who follow Niemeyer will say the majority of cases of phthisis are not tubercular, but inflammatory, and are therefore not due to this cause. But few cases of consumption, I think it is safe to say, result from cold, or the inflammatory chest affections commonly ascribed to exposure, in *otherwise healthy subjects.* There is predisposition, which is the result doubtless almost invariably of faulty habits of life, resulting among other things in imperfect nutrition, debility, deficient æration of blood, etc.; and the deprivation of a due amount of pure air, especially while sleeping, and during the most of the twenty-four hours in winter, is no doubt the most important factor in the production of this lowering of vitality; the first step towards the production of tubercle and scrofula. The medical profession is becoming fully alive to the importance of thorough ventilation in the *treatment* of disease, as the almost perfection, in this respect, of many of our recently-constructed hospitals fully attests.

Closely connected with the *amount* of out-door air which an invalid will get at a winter resort is the *temperature.* Let us, therefore, first turn our attention to the *winter and spring temperature* of Florida, and compare it, as well as its *equability,* with that of other places. I have abridged the following table, by Dr. A. S. Baldwin, published in the Proceedings of the Florida Medical Association, 1874–75:

	Spring.	Summer.	Autumn.	Winter.	Year.
Jacksonville	70.06	81.82	70.35	56.33	69.38
St. Augustine	68.54	80.27	71.73	58.08	69.61
Palatka	70.62	83.57	70.20	57.18	69.64
New Smyrna, Indian River	71.80	79.14	62.43	63.22	69.17
Florida	71.62	80.51	71.66	60.04	70.95

Referring to the winter and spring months, the temperature

* Manual of Hygiene. Parkes.

of Florida may, in general terms, be compared to that of a typical May and September in the Northern States, with some quite warm and some quite cool variations, which will again be referred to. There is a very erroneous idea prevalent with regard to the temperature of the month of April, and the first warm weather of March is apt to drive invalids off to seek a cooler climate, under the impression that the heat must necessarily be oppressive. Though the temperature of April, as indicated by the thermometer, may be considerably higher, it is not infrequently a more agreeable month than February or March, as was the case this year. The following table was furnished me from the signal office at Jacksonville, for which I am indebted to the kindness of Mr. F. Z. Gosewisch, the signal officer:

MEAN TEMPERATURES.

	1873.	1874.	1875.	1876.	1877.	1878.
March	58.9	66.0	60.1	60 9	60.8	65.4
April	69.1	70.0	62.8	68.8	68.2	71.3

The heat *in the sun* is, except during the morning and late in the afternoon, often somewhat oppressive, but there is almost always a sufficient sea breeze, commencing at 9 or 10 o'clock A. M., and lasting until sundown, to render it very pleasant in the shade. This, indeed, is the case even in the summer months, and the testimony of Northern people who reside in Florida the whole year, is that the early morning, the late afternoon, and the evenings are not unpleasantly warm, as a general rule; that is, when one has free access to the easterly wind which generally prevails as a sea-breeze at pretty regular hours. The army records show that the thermometer in Florida rarely rises as high as in most of the Northern States and Canada, but of course the heat is more continuous. A temperature, however, which would be felt as very oppressive in the Northern States, except on the seacoast, is in Florida quite endurable, owing, no doubt, to the peculiar configuration of the State, jutting out, as it does, in a narrow strip into the ocean, and with rivers or other considerable bodies of water scattered liberally over its surface. The isothermal of 70°, the April temperature of

Palatka, passes through that place, through Galveston, New Orleans, Teneriffe, Alexandria and Canton.

Equability of Temperature.—Writers on medical climatology were at one time disposed to regard this as the most important quality; but, as in the case of dryness, moisture, rain-fall, and other characteristics, it is now thought advisable to define the *degree* of equability. Many travellers who have spent but a short time in Florida, and who have been led to look for perpetual spring, have been surprised at the not infrequent changes in certain months, and have disseminated erroneous ideas as regards their frequency and severity. The *diurnal range* for Florida is 13° to 14°, and for Palatka still less; while those variations, which occur at longer or shorter intervals, are within moderate limits, so as not only not to produce unpleasant effects on the most delicate invalids, but are decidedly beneficial, especially to the worst cases of pulmonary disease, acting as a tonic and tending to vary the monotony, which, in tropical climes, is so injurious. Nothing acts so unfavorably on all forms of invalidism as monotony of any kind. In tropical countries, where these changes are so rare that no provision against cold is made, except to bring a small brazier of coal in the invalid's room, they are to be deprecated.* But in Florida they are pretty uniform, and the wood-fires in the open fire-places, with which the hotels and boarding-houses are well furnished, are greatly enjoyed by all persons, sick and well. The evenings and nights are so cool throughout most of the winter, and even early spring, that a wood-fire is commonly seen in the sitting-rooms.

Turning to the evidence of army officers, Dr. Southgate remarks, in his report: "Rarely is the change so great as to impress the individual in fair health uncomfortably, and the invalid has invariably sufficient warning to guard against it." Surgeon-General Lawson, speaking from an extended personal experience, says: "The climate of Florida is remarkably equable and proverbially agreeable, being subject to fewer atmospheric variations, and its atmospheric ranges are much less than in any other part of the United States, except a portion of the coast of California."

* Influence of Climate in Pulmonary Consumption.

Sir James Clark, in his well-known work on Climate, remarks: "A long residence in a very equable climate is not favorable to health, even with all the advantages of exercise in the open air. A moderate range of temperature and of atmospheric variation seems to be necessary for the preservation of health." Turning to a more recent authority, 1877, and one of the best, Dr. Charles Th. Williams,* referring to the invalid's dread of cold changes, says: "And herein lies their mistake; for if our invalids could indeed find a lotus-eater's land

> In which it seemed always afternoon,
> All around the coast the languid air did swoon,

I would predict that the results on their health would be rather pernicious than otherwise, and loss of appetite and diarrhœa would probably be induced." This constitutes one of the prominent distinctions between a tropical and a semi-tropical clime; between the West Indies or Nassau, for instance, and Florida.

A good deal of attention has lately been devoted to *high altitudes* for consumptives, and various theories have been advanced to explain the effect of elevation. Thus, Mühry thinks the effect is due mainly to the necessity for greater expansion of the chest in consequence of the *rarefaction* of the air; while Weber ascribes it to a cause, among others, just the reverse—the superior oxydizing power of the air from the presence of much ozone, thus lessening the amount of air necessary, and thus requiring less expansion, placing the crippled organ in a comparative state of rest, as it were. But all the theories have been disproved by further observations. "It was soon demonstrated," says Schreiber (op. cit.), "that the altitude at which this immunity commenced varied with latitude, being higher the nearer we approach the equator, which could not be the case if the above theory were correct, the law of diminished pressure being everywhere the same." "An inquiry instituted in Saxony, at the expense of that government, proved that elevation had nothing to do with immunity, very high localities in the Erz and Riesengeberge exhibiting a large percentage of phthisis as soon as the inhabitants turned their attention to the industrial arts, such as mining and the manufacture of china;

* Influence of Climate in Pulmonary Consumption.

while, on the other hand, the percentage in the lowlands was diminished when the people were engaged in agriculture and cattle-raising." In other words, that it was the abundance of good air and not any peculiar property of it which effected the good results. Nor are the assertions of writers as to the complete immunity of the natives of high altitudes in other parts of the world, in the Jauja mountains of Peru, for instance, confirmed by later observers, although all agree that consumption is rare;* but so it is in Florida among the white race; the disease in the exceptional cases being, as a general rule, induced by bad food and bad habits. In fact, it is now sufficiently well demonstrated that it is to be found everywhere. Richard Payne Cotton, M. D., Senior Physician to the celebrated Brompton Hospital, England, says:† "And here I would make a passing remark on the now rapidly dying-out question, that there is anything in any one climate, wherever it may be, which is opposed to the development or even the increase of tubercular disease—consumption exists everywhere. There is no favored spot where it is not. There is no 'promised land' for our consumptive sufferers where they will fail to meet consumptive sympathizers." The valuable statistics which we get from the Army Medical Reports of England demonstrate this conclusively. It has been long thought that intensely cold countries, near the poles, for instance, were absolutely free from phthisis. But, notwithstanding the positive assertion to the contrary, the Army Reports tell us that, "with the exception of epidemics, diseases of the chest furnish the largest quota of mortality," and mention that "*consumption is common.*" So is it in Shetland and Iceland, according to the excellent authorities quoted by C. T. Williams (op. cit.). "The Army Medical Reports," says Parkes (Practical Hygiene), "show how little reliance can be placed on the cold-immunity theory, for it appears that the mortality in Bengal from phthisis is almost

* "Lombard's Statistics," says Williams, "give us a phthisis mortality of 5 per cent. up to nearly 4,000 feet." Dr. Ludwig found a case of consumption in the Engadin, which boasts of entire immunity, who had never lived at a lower level than 4,000 feet.

† British Medical Journal, 1877.

precisely the same as in Canada (1.70 and 1.71 per 1,000, respectively). "In the Presidency of Madras, which is an exceedingly hot region, our Army Reports," says Williams, "assign one of the lowest phthisis mortalities of all the countries where the British army is stationed; while among the Sepoys, the mortality from this cause is even less."* "But," he says, "the crowning objection" (alluding to the diminished pressure theory) "appears to come from Asia, from the Kirghis land. According to M. Maydell, this vagrant population of over a million in number are quite exempt from phthisis, although they live, not in Himalayas or Andes, or on Alps, but on a steppe one hundred feet below the sea level." The foregoing facts will give some idea of the difficulties which environ this subject of the effect of climate on consumption. Take the famous health resorts of the south of Europe, for instance. "In Nice," says Dr. Meryon ("London Lancet," July, 1850), "more *natives* die of phthisis than in any town in England of the same population." In no country, says Dr. Pollock, is consumption so rapidly fatal as in Genoa, Florence, and Naples ("Medical Gazette," volume xlvi). In Madeira, consumption is frequent

* In 1870 the deaths from consumption in the United States amounted to nearly 70,000, more than double the number from any other cause. In the different States the mortality from consumption, taken from Dr. Bizzell's report (Medical Association of Alabama), is as follows: In Maine, 1 to every 3.9 deaths from *all causes*, or 1 to every 315 of population; New Hampshire, 1 in 4.5, 1 death to 334 of population; District of Columbia, 1 to 4.6, or 1 to 298 of population. The mortality from phthisis in the States of Vermont, Rhode Island, Connecticut, Delaware, New York, New Jersey, Ohio, Pennsylvania, *in fact*, every State and Territory of the Union north of the 38th parallel, ranges from 1 in 3.9 in Maine to 1 in 11.9 in Kansas; and in no State north of this does the mortality fall so low as 1 in 12, save in the Territory of Wyoming, where the statistics are too scant to be worth much. In Minnesota it is 1 in 7.6 deaths from all causes; in California, 1 in 7.2; in Arizona it is only 1 in 250 from all causes; in New Mexico, it is 1 to 26.2; Nevada, 1 to 20.5; Florida, 1 in 17.3; Texas, 1 in 16; Louisiana, 1 in 10.3; Georgia, 1 in 15.6; Alabama and Arkansas, each, 1 in 14.2; Mississippi, 1 in 13.2; South Carolina, 1 in 11.2; North Carolina, 1 in 8.6; Virginia, 1 in 7.2.

We see from this table that in all the States east of the Mississippi, Florida has the smallest mortality from phthisis; and a considerable share of this mortality should be attributed to persons coming into the State from other States and dying there, many of them in a hopeless condition on their arrival. Allowing for this, the rate is probably as low as in New Mexico or Nevada.

among the natives. In Australia, to which many of the English resort for the relief of consumption, it is quite common. But, of course, in all these places we must make due allowance for the condition and habits of the people as a factor in the development of phthisis.

With regard to the *elevated regions*, about which so much is written now, and which are becoming so fashionable, for the sway of fashion is omnipotent and omnipresent, it is worthy of note that in almost all, if not all of them, diseases of the respiratory organs are very prevalent. Speaking of the Peruvian mountains, where it has been asserted the natives are almost entirely free from disease, Williams writes: "The diseases most prevalent are those of the respiratory organs, such as catarrh, pharyngitis, pleurisy, pneumonia, pleuro-pneumonia, and are all marked by an adynamic type.* Diseases of the brain and spinal cord are common." Similar reports, except the frequency of pneumonia, come to us in the American Army Medical Reports from all the posts situated on these high elevations (5,000 to 7,000 feet). *Neuralgia* and *rheumatism* are very common in those altitudes, and *nervous diseases* are aggravated. Dr. Dubois, of San Rafael, says ("Medical Record," March, 1872,) the same of that region, although it is highly commended for other affections. Another peculiarity of these elevated regions, of all very dry regions generally, is the extraordinary *range* of temperature. Thus, Assistant Surgeon J. H. Patzki, writing from Fort Fred. Steele, Wyoming Territory, says "a daily range of 40° is frequently observed, of 50° not rarely,

* "It has been long observed that the inhabitants of elevated mountain districts appear to be peculiarly exempt from consumption, and an attempt has been made of late to turn this observation to practical account by recommending such localities as health resorts for the phthisical. It is, however, more than doubtful if the fact that the hardy mountaineers who inhabit Alpine districts, and whose lives are passed under the most favorable hygienic conditions as regards pure air and exercise—the natural prophylactics against tubercular disease—are rarely attacked by consumption, can be regarded as a proof that these localities are therefore suitable winter resorts for patients already phthisical, and whose state of health would, in such elevated and oftentimes intensely cold and variable climates, probably confine them to the house in the new sanitariums of the Engadine, or other Alpine resorts, during the greater part of the winter." Madden (op. cit).

and of 60° occasionally" (e. g., Aug. 9, 1874, max. 86° min. 26°).* In these regions there is also a peculiar *fever* prevalent, which is serious, and not infrequently fatal. It is known all over the United States, in the mountains, even at moderate elevations, and is called by the people and by the medical men "mountain fever." It has usually been described as a *typhoid* fever, but the medical officers of the army have established the fact that it is a remittent and of malarious origin.

Before dismissing the subject of the effect of high altitudes, which, by the by, have very different effects as to respiration, etc., on different individuals, it may interest those who send their patients to these places to know the effect elevation produced on a medical man and how he treated it. Assistant Surgeon W. H. Gardner, U. S. A., stationed at Fort Union, New Mexico, thus relates his own case:

"Shortly after arriving at the post, I was attacked with a fullness in the head, ringing in the ears, mental hebetude, and confusion of ideas, dizziness and headache. Thinking these symptoms might be caused by constipation, dyspepsia, or torpidity of the liver, I took a mercurial purgative, and followed it by a dose of Rochelle salts, which relieved the fullness of oppression for a day or two, but it at once returned, the dizziness and confusion of ideas increased, and a feeling of numbness and tingling commenced in the fingers of the left hand, and gradually spread until it involved the whole left side, even the muscles of the tongue being involved in the paralysis, so that I could not articulate. There was also oppression of breathing, throbbing of the carotids, and slight dilation of the pupils. The only medicine handy at the time of my first attack was a bottle of chloroform; and thinking the symptoms might be due to spasm of the cerebral or pulmonary veins, I poured a dram or two on my handkerchief and inhaled it, when the disagreeable symptoms promptly subsided. The next day, on my visit to Dr. Moffat, of our corps, I told him of my troubles, and he thought they were due to malarial poisoning, and advised me to commence a course of quinine and arsenic, which I at once did, taking twelve grains of quinine and one-tenth of a grain of arsenic each day. But, in the course of five or six days, while under the full influence of these remedies, I had another attack in all respects similar to the first, coming on after a hearty dinner, which was relieved by a prompt emetic. Shortly after this second attack, I was sent for to attend a case at Mora (fifteen miles northwest of the post, about four hundred feet higher in altitude), and while there alone, I had another attack, more severe and prolonged than the other two, and upon this occasion I certainly thought there would be another vacancy in the medical corps to fill, for I took emetics, bromide of potassium, and chloroform *ad nauseam*, without the least effect. The symptoms went off

* Dr. Gehring, of Denver City, graphically describes the risk of sending patients to these elevated regions (Territorial Medical Society, 1873). He says if he has vigor and *digestive force*, and "if his disease is *not too far advanced*, let the patient be sent to Colorado; without it let him be advised to remain at home. Our Territory is like a wild steed. If you can tackle him he will carry you out of your difficulties; if you can not, he will break your neck."

before morning; but when I got back to the post, I brought the Darwinian theory to bear on the case. *Ita:* If the environment of an animal be suddenly changed, and the animal does not change his habits to suit his environment, it will be speedily eliminated. The only radical change in environment which I could detect here was decreased atmospheric pressure from increased altitude, and consequently deficient oxygenation of the blood. The indication, therefore, was either to supply the deficiency of oxygen to the blood, or to reduce the volume of blood to the decreased amount of oxygen. The latter alternative seemed the easiest and most certain. I therefore decreased the amount of my nitrogenous food, and made up the quantity by laxative vegetables and fruits, and have been in good health ever since. I have seen two cases since, in every respect similar to mine, and they have promptly succumbed to the treatment indicated; that is, decreasing the amount of blood to the decreased amount of oxygen by cathartics and decreased animal food."

Dr. Charteris, in a clinical lecture at the Glasgow Royal Infirmary, lately remarked: "The benefits of warm climates and of well-known health resorts for phthisis simply consist in this, that out-door exercise can be indulged in those with greater impunity and with less chance of in any way lowering the vitality."* This is the gist of the whole matter of climate. Though patients with pulmonary troubles *can* bear cold if they *will*, and do improve and recover in the coldest climates; though they even do better, as a general rule, in a rather large class of cases, in a moderately cool climate, if not moist; though they recover in mountain ranges from six to ten thousand feet above the sea level; yet I am confident that, in the end, it will be found that the majority of consumptive invalids will do better in a moderately warm and moist climate like that of Florida than in any other variety, because nearly all such invalids shrink from moderate degrees of cold, and even if they have sufficient vitality, have not enough energy, will, or perseverance to brave any considerable degree of cold day and night, as they must do to get the benefit of the climate. A climate must not only be such as to render it *safe* for them to be out at all suitable hours, but to entice them out, to make them ashamed to stay in-doors. A mean winter temperature of about 48°, and spring temperature of 55°, which is that of the winter resorts immediately north of Florida (of course it is far colder

* "Preference should always be given to those winter resorts," says Madden, "Health Resorts of Europe and Africa," 1876, "which present the greatest inducements and opportunities for open-air exercise; and no small part of the benefit derivable from removal to a southern health resort results from the opportunies afforded in the latter of being much in the open air."

at Asheville and similar stations) is too low to *entice* many of the feeble invalids out of doors, except on calm, sun-shiny days. But in some of them, as at Aiken, this degree of cold is much enhanced, as far as the sensations of the invalid are concerned, by the winds which frequently prevail.* At such times most invalids will, therefore, be found hovering over the comfortable wood-fires, just as they do here when one of our cold transitions occur, and will be pretty sure to keep all the apertures of their chambers closed at night, thus depriving themselves, during by far the greater part of the twenty-four hours, of the principal means of cure.

The mean temperature of these six months in Florida is, by our tables, about 63°; and, during about five-sixths of the days, the sun shines so brightly, the air is so balmy, the song of the birds so enlivening, and the orange trees, in their delicious bloom or laden with their golden fruit, lend such a charm to the outlook from the windows, that the most indolent or the most cold-blooded invalid feels little inclined to stay in-doors. Contrast such a winter with that of the boasted and time-honored resorts of Southern France and Italy, even in their most protected cities. I will say nothing of their spring, for no one who has ever tried it, or has inquired of any reliable authority about it, would trust himself there after the first of March. Even in the most sheltered localities, as at Cannes and Mentone, a change, on one of the most pleasant days, from the sunny to the shady side of the street, often produces a shiver, and renders necessary for an invalid an extra covering;† while in all the resorts of the Eastern Riviera this is always the case. At sunset one must rush home and in-doors for his life; nor does

* Dr. Kane estimated that it made a difference of 40° in the polar regions when he turned his face instead of his back to the wind.

† There is a saying in Rome that "only dogs and strangers go on the shady side." Dr. Dubois, of San Rafael, says of the much-vaunted Mentone: "I remember a number of chilly, windy days, which, without the ordinary conveniences for making fires, were spent wrapped up in overcoats, and in endeavoring to make a fire, that should remind us of home, with several baskets of olive-wood." Such is the opinion of those who winter at similar European resorts, most of which are more exposed than Mentone, unless they happen to be on the sunny side of the house.

any prudent man dare to ride out in the afternoon without the wraps he would require in his northern home. Such is the case even in Algiers, which is a superior climate to that of the north shore of the Mediterranean. My friend, Dr. W. F. Jenks, informs me that, while walking into the city, in an uncomfortably hot sun, he always carried a thick overcoat on his arm, for the moment he struck the shady side of one of the narrow streets, a shiver passed through his body; and, while riding, he always provided himself and family with thick woollen wraps for the change which was sure to take place near sunset. "Though the temperature of Hyères in winter, *as marked by thermometer*, is not low, the air is sharp and often cold. The mitral is not infrequently painfully experienced, especially in January, February, and March. In spring, the sun acquires great power, and its influence, alternating with the occasional cold winds, produces frequent and rapid changes of temperature very trying to those in health." Speaking of Nice, the same author says:* "In winter there is a difference of 12° to 24° between the temperature of places exposed to the south and the north, between those in the shade and the sun." In Florida, during most of the warm and pleasant days, one may not only be out at sunset on land, but with equal comfort on the water. I have frequently called the attention of persons to this contrast with the European climates when we were returning from a row at sunset; some of us in midwinter in our shirt-sleeves. Had there been any considerable degree of dampness in the air, this would not have been prudent or comfortable. But one seldom feels any dampness on sunshiny days. Those who have never been south, and who are shivering in a winter temperature of 10° to 30°, may think that 48° or 55° would be abundantly warm to insure ability and inclination to exercise in the open air; but while a winter temperature of that degree in New York or Boston would seem like summer, it is considered in Florida, even by sound persons, as entirely too cool for comfort. A person requires much warmer clothing in the South than at the North, at the same temperature. The air here during the greater part of the winter, with the exception of a

* Edwin Lea, Prize Essay, London.

brief series of days now and then, when an almost summer temperature is reached, is, in connection with the pleasant surroundings, exhilarating, not debilitating. It is a great mistake to suppose that warmth, *per se*, is inimical to health or strength; heat is, not warmth; such a temperature is only such as nature requires to keep all the organs in a healthy state of action. The warm weather of the spring and autumn at the North, and even the comparatively hot weather of summer are the healthiest seasons. Persons make themselves uncomfortable by fuming over the thermometer, but they don't get sick, or not sufficiently to send for a doctor. But unusual summer heat or winter cold, long continued, equally tends to swell the bills of the doctors and the undertakers.

There is a remarkable unanimity, within the last few years, in the opinions of the medical reporters from all sections of our country, from the Atlantic to the Pacific, from the level plains and the highest altitudes, from very cold and moderately cold regions, on this point, that only cases of incipient phthisis, that is, *tubercular* phthisis, are likely to be permanently benefited, and almost all of them warn against sending cases of advanced disease, even when not much enfeebled. Dr. Gleitzmann, of the Sanitarium at Asheville, N. C., seems to be of a different opinion. He says (Trans. of the Med. and Chir. Faculty of Md., 1875, p. 204): "The patient, after returning home" (from southern climates), "has not acquired that power of resistance which alone can prevent a new bronchial catarrh or fresh catarrhal inflammation attacking the alveolæ of the lungs. As much as ever, he is exposed to the same danger of a relapse from the same causes, or is perhaps inclined to it in a still higher degree, as the warm, humid atmosphere has served more to enervate than to invigorate the system." He quotes Madeira as the type of such southern climates. On the contrary, the reporters from the cold regions, as in Minnesota, and the less severe regions further south (see Transactions of State Medical Societies and Army Reports) say that invalids, even after a residence of several years, and a subsidence of all the symptoms, are very apt to relapse on returning home, and frequently regain their health on repairing again to the colder

regions; and they strongly urge invalids to remain permanently, or for a long time, at least, after the subsidence of all bad symptoms. Sometimes these climates fail for a year or more, or a series of years, to fulfill the expectations of the physicians there and their patients, and from causes not always fully explicable. Thus, in Minnesota, for instance, this was found to be the case. And the Committee on Climatology, Epidemics, and Hygiene proposed a question as to the cause to the physicians of the State. "The question," says the committee, "originated in the belief that the climate of this State, from some cause or other, operated less favorably on consumptive patients than formerly." The answers were all, except from one who had no phthisical patients, in the affirmative, that the climate had lost its usual effect. "Dr. J. E. Finch had several consumptive patients under notice, all of whom failed with unexpected rapidity on the approach of spring. Some of these had come to Minnesota with the disease in its early stages, and had been so much benefited by a residence here as to believe themselves quite recovered." Some inscrutable agency was at work, which may influence any climate at times, whether hot or cold. This question, that is, as to the failure of all climates to relieve a very large majority of cases in the later stages of consumption, may be considered settled. But when confidence in the "hyperventilation" system becomes general among the public and the profession, we may reasonably expect a far better showing from climatic treatment. In the meantime, the warmer and pleasanter climates will naturally succeed better than the colder, notwithstanding the alleged superior qualifications of the latter in other respects.

Malaria.—This is a topic which inevitably enters into the discussion of all southern climates. So much has been said about it both in and out of Florida, and there have been so many misrepresentations about it as to render necessary a more extended notice than it received in my first paper. A great injury has been done to Florida as a winter resort unwittingly, both by physicians and laymen, who have been accustomed to associate the idea of this State with that of swamps, alligators, and fevers, and wittingly by those who think it their *interest to*

misrepresent facts.* It is a matter of the first importance that physicians at least should have correct ideas on this subject, otherwise patients are apt to be debarred from deriving benefit from the very best season of the year here, the *spring months.* In the first place, tourists travel almost always along the water courses, and seeing them, on either side, bounded apparently by interminable swamps, are apt to form an erroneous idea of the extent of the swamps of Florida. They usually form only a narrow belt along the river, and immediately behind are the pine lands, except when a strip of hammock intervenes, often the tops of the pines being visible over the swamp.† In many of these swamps the tide ebbs and flows, and they rarely give rise, even in summer, to any serious form of fever. In the second place, the sickly complexions and gaunt forms of many of the native Floridians, who are met with at the landings, are apt to suggest the continued inroads of malaria. But these appearances are due not so much to the climate as to their peculiar mode of life, their scanty clothing, sufficient for three-fourths of the year, but not for the winter months; their unsuitable habitations, but especially their food and drink. From early childhood they live on sweet potatoes and the everlasting hominy and grease, the melted fat of pork stirred liberally in hominy, not always well boiled. This they become so fond of that they do not care for anything better, although game and fish surround them almost everywhere. This food, and their drink from the shallow wells, or the dark-colored water of the

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* It is the custom of many persons living at Florida resorts, off the St. John's river, to represent, for very obvious reasons, to tourists, that fever prevails there the year round, and that it is dangerous to visit it at any time. In this manner they have excited alarm in the minds of those proposing to come to Florida, and have diverted them to other southern resorts; thus, in the end, injuring themselves as well as others. Hotel runners and the agents of steamboat lines running to other localities all aid more or less in this fraudulent attempt to secure custom.

† A great advantage of the peculiar distribution of the different kinds of land in Florida is, that the hammock or richest lands and the pine are in such close proximity, that the farmer can work in the former by day and retire to his house in the latter at night, where he is comparatively secure from the danger of malaria or any dangerous form of it.

sluggish brooks, begets dyspepsia, or as they term it, "biliousness," and then come "Tutt's liver pills," or some powerful cathartic, which affords temporary relief. The people in the cities and villages, and the families of northern men along the water courses, who have brought up their children there, but who live differently, present an entirely different appearance. In this village they will compare favorably with those in any northern town. James Johnson ascribes the horrible aspect of the inhabitants of the fertile but malarious plains of Lombardy mainly to the same causes. Their food and drink are even worse than that of the Floridians in quality, as are also their houses. Sir James Clark, on investigating the cause of a considerable prevalence of consumption in the Island of Madeira, found that it was due almost entirely to the habits of life of the poorest peasantry, among whom almost all the cases occurred. They are "hard-worked and miserably nourished, badly clothed and worse lodged; their beds consist of pallets of straw raised a foot or so from the ground, damp during nine months of the year." So we infer that a location is not necessarily unsuitable for invalids because the appearance of the inhabitants is unfavorable, or because a considerable amount of disease prevails, even the very disease for the alleviation of which the invalid desires a change. I quote the following paragraph from my former paper:

As regards *liability to disease* in Florida, a careful examination of the "Medical Statistics of the Army," extending through a long series of years, personal observation and conversation with medical and line officers engaged in the Seminole war, indicate a remarkable exemption throughout the State from malignant or even very serious diseases.* "At all seasons,"

* Forry (Climate of the United States and its Endemic Influences) says, alluding to St. Augustine: "This is only the second time that yellow fever has prevailed in this city for twenty years." This refers to about 1840. Since 1857 there has been no yellow fever in East Florida, except two or three cases brought to Gainsville a few years ago from Pensacola, where it is apt to be conveyed from Havana, until last summer, at which time all the conditions for its spread were more, perhaps more, rife than they had ever been. Both Fernandina and Jacksonville were in a most unsanitary condition, when a case, through a careless quarantine, was brought into the former place; so long a period of exemption having naturally caused a great relaxation in vigilance. The severe lesson which these cities have received will insure strict attention to quarantine regulations for some years to come. The authorities

says Forry, "with the exception of the northern division, the mortality is lower in East Florida than in any other class of ports." He ascribes this, in a great measure, to "its being nearly in a state of nature." In the "Statistical Report of the Sickness and Mortality of the U. S. Army" from 1855 to 1860, is a table at page 163, which exhibits the mortality and sickness among the troops stationed at the interior gulf ports, and embracing, especially, as regards the former, the most unhealthy part of the peninsula. The number of *cases* for the year is 19,312; the *deaths* 119, or 0.61 per cent. There were but four cases of *congestive* fever, none of which died. They could hardly have been of the severe character of those met with in other Southern States. If we take into account the very unfavorable circumstances surrounding the small commands scattered over this area, the bad water, poor food at times, hard work, and continuous exposure, the small percentage of mortality is remarkable, and shows that although the cases reported for treatment are numerous,* the diseases of all kinds were very amenable to treatment and rapid cure, as all the military operations went on successfully, notwithstanding this large amount of sickness. The very small percentage of deaths from diseases of the respiratory organs is especially noteworthy—only 13 cases among the 19,000 of all diseases treated. Notwithstanding the dampness, rains and

of Jacksonville have been prompt and liberal in voting a large appropriation, and have already made extensive sanitary improvements, and the work still goes on. It is hoped and expected that next winter will find these cities as free from fevers of all kinds as usual at this season. It is a remarkable fact, and indicates how little yellow fever is disposed to spread in Florida, that in the several months during which it prevailed in Jacksonville, with unrestricted intercourse (except during a brief period with Palatka), with all places along the river, steamers plying to and fro daily with freight and passengers, not a single case occurred at any point along the St. Johns south of Jacksonville, and only one case, as far as I am aware, on any boat. This occurred in the person of the pilot of the Volusia, while I was on board. He returned to his residence in Jacksonville, and died there. In 1857 a few cases were brought to this place, but, though no precautions were observed, it did not spread to any other person. The recent epidemic did not attack a very large number of persons at Jacksonville, and the expediency of declaring the disease epidemic at all was debated for some time by the authorities. At Fernandina, though the *number of cases* was large (about 1,200), the mortality was small; about 60, so far as I have been able to learn, indicating a comparatively mild form of the fever.

* Soldiers report for relief from duty for the most trivial affections.

exposure, there were only 33 cases of pleuritis and 25 of pneumonia. "I have served in Florida," says Surgeon-General Lawson (letter to the Hon. D. L. Yulee, U. S. Senate, 1855), "and have served also with an army on the northern frontier, and from my experience of the influence of climate and active operations of the army in the field on the health of soldiers, I have no hesitation in expressing the belief that, had the troops engaged in the Florida war been engaged for the same length of time in active operations, in winter and summer, on the frontiers of Canada, though the *cases of disease* might have been less numerous, the *mortality* would have been infinitely greater than was experienced in Florida."

Of course there are here, as in other States, healthy and unhealthy areas, and areas where the *summer* heat is found to be more intolerable than in others. It behooves the settler, therefore, or the invalid, if he proposes to make the State his *permanent* residence, to look well to his circumstance. Along the St. John's river and its vicinity, malarious diseases are, during the summer and autumn, more prevalent in some localities than in others, and especially where numbers of people locate at once, and commence clearing the hammocks and swamps on a large scale, in order to form a village or "settlement." Places which have been reputed healthy have become the reverse, from admitting the sun's rays suddenly and extensively to a surface previously shaded by the forest and undergrowth, and from turning it up with the plow. This is a well-known fact. A remarkable instance of this action over a large extent of country is the unusual prevalence of malaria during the past eight or nine years over a large portion of the Southern and Eastern States, and some of the Western States. It is not the forests which have been cut down, but during all this period, until within the past twelve months, when rains have been more frequent, an unexampled drought has prevailed winter and summer, only surface rains having occurred, but not sufficient to penetrate to the sources of springs and wells, so that these gradually dried up, and on several occasions farmers were compelled to take their cattle long distances to brooks to give them water. The snows have also been very deficient in winter, not

sufficient to wet the subsoil. Large surfaces, therefore, which had always been kept cool and moist in summer by springs, became dry, and wherever there was an impervious subsoil or rock, there the malaria was generated. This has been, in my opinion, the most potent if not the only factor in the causation of the marked increase of fevers in all these areas."

CHEMISTRY AND PHARMACY.

"Diruit, ædificat, mutat."—Hor.

CONDUCTED BY C. W. NULL, M. D., LOUISVILLE, KY.

The Quantative Determination of Urea.—Boerhave, in his "Method of Chemistry," describes a substance he obtained by the evaporation of urine, and called by him "the essential salt of urine." This was urea. Wohler obtained it artificially from ammonii cyanidi in 1828, and for this Liebig gave a formula. Urea is found in the blood, lymph and chyle, and in small quantity in the sweat, vitreous humor, the substance of the liver, and the muscular juice. It seems to be formed not alone by the disassimilation of the nitrogenized tissues, but also by the decomposition of the surplusage of similar substances taken as food. It constitutes from two to three per cent. of the urinary secretion, and the amount eliminated daily by a healthy adult ranges from 450 to 600 grains. It is increased by active exercise, and, according to Hammond, by unusual mental exertion. Transient increase or decrease may be due to temporary apathy of the kidneys, or to accidental polyuria; but the continued excretion of an amount larger or smaller than the average becomes a sign of disease. As urea may be considered practically an invariable constituent of the urine, a quantative analysis, if any, is required, and for this purpose numerous processes have been devised. Most of them require complicated apparatus, considerable skill and troublesome calculations to determine the result. The only practicable methods for the physician are Liebig's, Davy's, and that to be described, devised by

Dr. Fowler, of New York. Liebig's method is trustworthy and accurate, but troublesome and difficult. In 1854, Dr. E. W. Davy published, in the "Dublin Hospital Gazette," his process, which, from its simplicity, became very popular. It depends upon the fact that urea, acted upon by the hypochlorites of soda or potash, is decomposed, being resolved into sodic chloride water, carbonic acid gas and nitrogen. Dr. Davy found that the carbonic acid gas liberated does not escape in the gaseous form, but combines with the excess of alkali in the reägent, and the only gas set free is the nitrogen. He determined that each cubic inch of gas liberated corresponds to the 645th of a grain of urea. Full directions for applying the process will be found in Flint's and Piffard's Manuals.

In June, 1877, Dr. G. B. Fowler published in the "New York Medical Journal" a new process, being the prize essay of the Alumni Association of the College of Physicians and Surgeons. As the quantity of sugar in diabetic urine may be determined by the difference in specific gravity before and after fermentation, so the same difference before and after the decomposition of urea by the hypochlorites, should bear a definite relation to the quantity present in the urine. Urea consists of seven-fifteenths of its weight of nitrogen, and therefore almost one-half will disappear. Dr. Fowler found that every degree of density lost corresponded to .77 per cent., or about $3\frac{1}{2}$ grains per fluid ounce. The best hypochlorite to employ is Squibb's "solution of chlorinated soda," or Labarraque's solution. Seven parts by volume of this solution are capable of decomposing all the urea, unless the urine contains a very great excess, in which case the urine should be diluted with an equal bulk of water, and the result multiplied by two. The only apparatus required is a urinometer, a jar, and a graduated vessel for measuring the fluid. To use the method, first take the specific gravity of the urine and of the solution of the hypochlorite; then add to one volume of the urine seven volumes of the hypochlorite solution, when effervescence, indicating the escape of nitrogen, will ensue. Shake the jar containing the mixture occasionally and allow it to stand for two hours. When quiescent, take its specific gravity. To get the specific gravity of the mixed liquid before

decomposition, multiply the specific gravity of the hypochlorite by seven, and add to the product the specific gravity of the urine, and divide the sum by eight. From the quotient thus obtained, the specific gravity of the liquid after decomposition is to be subtracted. The difference is the number of degrees lost, and each degree corresponds to .77 per cent. of urea. This seems complicated, but the operation is, in reality, exceedingly simple. For example, if the specific gravity of the urine was 1021 and of the hypochlorite 1045, we must add 1021 to seven times 1045 and divide the sum by eight. We obtain 1042, being the specific gravity of the mixed liquids before decomposition, and from this we subtract the specific gravity of the quiescent decomposed liquid. Suppose that is found to be 1039, then the difference is 3, which, multiplied by .77, gives 2.3 as the percentage of urea in the urine tested. Since changes of temperature affect the volume and specific gravity of liquids, the hypochlorite and urine should be mixed in proper proportions and the jar set aside, together with a bottle of the urine and of the hypochlorite in the same place. When decomposition is complete, the temperature of all being the same, their specific gravities can be taken and the calculation easily made. Neither sugar nor albumen interfere with this test. This process is very accurate, and so simple as to commend itself to the favor of the busy practitioner.— *W. G. Tucker, in Buffalo Med. and Surg. Jour.*

The Action of Codeia.—Mr. Aston, at the meeting of the Bradford Medico-Chirurgical Society, made some observations on the action of codeia. In considering a dozen cases of diabetes mellitus, he had observed that its first effect was to diminish the quantity of the urine, the specific gravity thereafter rising and then becoming diminished; on increasing the codeia, a fresh diminution of the urine, a rise in the specific gravity, with a subsequent fall, again occurred. In a case of diabetes insipidus, in which a man passed twelve pints of urine daily, highly albuminous, no sugar, a specific gravity of only 1002, and had excessive thirst, great emaciation, a pulse of 130, neuralgic pains, and cardiac hypertrophy, and on whom the reme-

dies for Bright's disease produced no effect, he employed codeia. The result of a month's treatment was disappearance of the thirst and neuralgic pains, diminution of the urine to four pints daily, with rising of the specific gravity, general improvement of the health and strength, though the albumen continued present. The quantity administered was one-quarter grain increased to one and three-quarters grain three times a day. The constipating effects of codeia were obviated by aloes and nux vomica. Codeia did not seem to have hypnotic effects, but diminished the frequency of the pulse.—*Lancet.*

According to Dr. Isaac Ott, in the "Journal of Nervous and Mental Diseases," codeia is a spinal convulsivant and narcotic, producing a veratroid contraction of striated muscle, and depressing the heart-beat by action on the cardiac muscles.

The Edible Pine.—This small scrubby pine (*Pinus edulis*) grows on the dry, rocky mountains of New Mexico, and is called by the Mexicans *pinon.* The seed is about the size of a kidney bean, with a rich oily kernel in a thin shell. It has a pleasant flavor, and sometimes oil is expressed from it. In favorable seasons the seeds are gathered in quantities and sold by the Indians to the people of New Mexico, Arizona, and the border settlements of Mexico. The seeds should be roasted before eaten, though sometimes they are consumed raw. The Indians of Alaska are in the habit, in the spring, of stripping off the bark of the *Pinus contorta* (twisted-branched pine) and scraping the newly-formed cambium from the trunk. This is eaten fresh or dried, pressed into compact cakes of a dark-claret brown. It has a coarse look, as if made of tan-bark; and, if broken up, presents a checkered appearance. When fresh it is not unpleasant, and the effect is that of a gentle laxative, but as the season advances it becomes strong in turpentine. When the cakes are old they have a bitter taste not unlike that of pine chips.—*Ex.*

Phosphide of Zinc.—According to Hager, this product, which is now used in therapeutics, can be prepared by the action of a current of phosphorous vapor over melted zinc in a current of hydrogen. It constitutes a gray crystalline mass, friable, and

containing disseminated rhombic crystals. Its specific gravity is 4.72. At a high temperature it volatilizes; its melting point is higher than that of zinc. It evolves an odor of phosphorus when it is broken up in a mortar, and gives off phosphuretted hydrogen when dissolved in acids. It does not change in the air unless heated, when it is transformed into phosphate of zinc. It contains 25 of phosphorus for 75 of zinc. Its action upon the animal economy appears to be similar to that of phosphorus, now so fashionable a medicine, but is six to eight times less powerful, which is a very great advantage. It can be administered in powders or pills, at the dose 0.005 gramme to 0.01 gramme (0.08 to 0.16 of a grain).—*Drug. Cir.*

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

Nervous Diseases; their Description and Treatment. By ALLAN McLANE HAMILTON, M. D. Philadelphia: Henry C. Lea. 1878.

As the author modestly states in his preface, this work claims to be a "concise practical book," and we have accordingly perused it, with some hopes of finding the author's claim, if not wholly, at least partially substantiated. The clinical study of nervous diseases is so complex a subject, that any attempt at its simplification, if undertaken with a due sense of the writer's responsibility as an author, and a clear comprehension of the subject in hand, is deserving of encouragement. Possibly Dr. Hamilton's intention was praiseworthy as an intention, but as an attempt his book is a most unqualified failure.

One of the first duties of a medical writer is to be familiar with medical terms in ordinary use. This has been grievously neglected by Dr. Hamilton, who states on page 94 that the *arcus senilis* is a small whitish circle overspreading the *iris!* and who, judging by the foot-note to page 420, which reads: "A form of skin disease denominated pompholyx by Dr. A. R.

Robinson is an example of a neurosis of this kind," was innocent of all knowledge of this, one of the oldest terms in dermatology, until a mediocre pamphlet published in 1877 called his attention to it. But it is in the very first chapter that we encounter such ignorance as to fundamental facts in neurology, that without any further reading we become convinced that Dr. Allan McLane Hamilton's undertaking to write a book, intended to instruct medical practitioners, was an act of unwarrantable temerity. Judging by the paragraph on page 19, it is evident that the author has never, in his life, seen the Island of Reil to recognize it, and equally vague are his notions of the location of the convolution of Broca. Although claiming to give directions as to the examination of pathological conditions of the brain and spinal cord, he neglects making any discrimination between post-mortem changes and real lesions. Possibly, judging by the sequel, this lesson has yet to be learned by the enthusiastic author himself.

The sublime tone of criticism adopted by Dr. Hamilton over such men as Trousseau, Brown Séquard, Hammond, and others is refreshing to witness. He has evidently emancipated himself from the thraldom of authority, although it is both singular and significant that his criticism should apply to matters of opinion or indubitable facts, and not to groundless theories and flat errors, which he accepts without an attempt at comment. Thus having imperfectly read and still more imperfectly understood the authors from whose works he has abstracted the greater part of his book, he assigns opinions to them which are evolved from his own inner consciousness, and then he proceeds to boldly overturn the products of his own misunderstanding. For example, he states on page 235: "Though Brown-Séquard is inclined to consider that this condition of affairs is pathognomonic of disease of the dorsal region, and, *I infer*, holds that it is essentially a nervous symptom, I am compelled to believe that it is only an intravesical change, and occurs in this disease just as it may in various local troubles," etc. To comment on such perversion would be an insult to the intelligence of our readers. While not hesitating to twist an author's statements, so as to have an opportunity of exhibiting his crit-

ical spirit, he unhesitatingly adopts and reproduces facts which have been exploded for twenty years, unknown to Dr. Hamilton, as, for example, Shroeder Vander Kolk's hypothesis that tongue-biting was the result of irritation of the hypoglossal nucleus.

A prominent feature of this author's method of writing is his assimilative capacity. We have known men who had fully as superficial a notion of their subject as the author before us, write tolerably useful hand-books on the strength of this same faculty of absorbing ideas and facts from others. But their success was due to the possession of a few other faculties besides that of mere copying; they possessed the art of collating, arranging, and classifying properly; they possessed some show of logic, and could write good English. It is owing to an absence of these faculties that Dr. Hamilton's book is so pronounced a failure. Just as he has taken the chapter on tetanus from Beard, that on cerebellar hæmorrhage from an abstract in the "Journal of Nervous and Mental Diseases," and that on anterior spinal paralysis from Seguin, with partial acknowledgment, he has taken the whole chapter on cerebral hyperæmia from Dr. Hammond's book, without any acknowledgment whatever. Of course he found it necessary, in order to carry out this process so as to prevent its being too obvious, to change the language. That his obscurity of style and imperfect syntax should materially assist him in rendering the form, though not the matter, unlike Dr. Hammond's chapter, is not to be wondered at. That the author was guilty of this procedure can be easily proven by numerous examples, prominently known by the bibliographical references, which have been unblushingly copied seriatim from Dr. Hammond's book, not only in this but in other chapters of his work. It would be an easy matter to prove that the author had not read a single one of the numerous German writers whom he liberally quotes. Not only are the names of these authors distorted in such a manner as to be almost unrecognizable, but the titles of their works are fearfully and wonderfully reproduced. He quotes Dieffenbach: "Du Ethergegen den Schmerz," which translated would signify, "Thou antiether the pain!" The reader, on reading the seventh reference, page 451, "Beitz, zür mikr. Anat. du Gan-

glion Nervensystems, Berlin, 1853," and seeing the comma between "Beitz" and "zür," will ask who is Beitz, that he should never have heard of him before. Vainly seeking for enlightenment in his library, he at last turns to Dr. Hamilton's text, to find that the seventh reference is attributed to Axmann. Unless the unsophisticated might now suspect Axmann of having written a monograph under the *alias* of "Beitz," we will solve the riddle. The correct title was: "Beiträge zür Mikroscopischen Anatomie," etc. Beitr. is the abbreviation of the first word. Dr. H., in copying the reference, converted the *r* into a *z*, and thus enriched our list of authors by one, adding a comma to separate it from the body of the reference, in order that this new creation, this immaculate conception, might stand fully emblazoned.

Useless as the volume is to the practitioner, it is worse than useless, absolutely misleading, to the student. The corpus striatum is an important *sensory* ganglion according to Dr. Hamilton, who also presents a figure of the hand of a patient, which purports to illustrate the results of progressive muscular atrophy, but which in reality represents the changes following traumatic injury. The figure is on page 256, and is accredited to Roberts. It is Roberts who preceded Dr. Hamilton in error, copying the figure from Duchenne; but he at least copied it correctly, and the reader will find both in Duchenne's diagram and Roberts' copy, the cicatrix of the wound delineated. Dr. Hamilton, it seems, could not resist the temptation of modifying the diagram, and ordered his wood-cutter to leave the scar away. There are several diagrams copied from celebrated authorities, in which either a line is added or another is omitted, on which the gifted author subscribes it, "Diagram after so and so, modified by the author."

To show how carelessly the author has arranged the discordant and incongruous facts which he has obtained from different and opposite sources of inspiration, we would refer to the chapter on spinal *pachymeningitis*, in giving the pathology of which affection he proceeds as follows: "The *simple forms of spinal meningitis*, that is to say the acute forms," etc., and gives the signs of acute inflammation of the pia mater.

His impertinent tone of criticism reaches its climax in the

discussion of the term "athetosis," introduced by Dr. Hammond. He evidently bears this writer a grudge, possibly for the simple reason that he saw himself compelled to copy so much from that author. Unfortunately he is himself here strongly inconsistent, for, at the head of the chapter, after discriminating between certain clonic spasms (athetosis of Hammond) and post paralytic chorea, he states in the text that there is no justification for such a division.

Equally impertinent is his suggestion as to a change in nomenclature. The new terms which Dr. Hamilton proposes to introduce are wanting in the first element of logic, namely, unity of plan, and as there is not the slightest danger of their ever becoming adopted, we shall not tire the reader by recounting the many absurdities coming under this head.

Kindred to this is his new principle of classification, he placing epilepsy among the "bulbar diseases," page 308. Now, considering that he unhesitatingly locates it in the bulb of the medulla, is it not strange that on page 319 he as unhesitatingly declares the cornu ammonis to be the seat of the lesion, and then enthusiastically adopts the theory of Hughlings Jackson on page 328, that it is caused by irritation of the cortex of the convexity? But we would both tire the reader and overcrowd these pages if we were to relate a tenth part of the inconsistencies similar to the above found in this work. An author so careless as Dr. Hamilton, who forgets his opening propositions before he reaches the end of a chapter, who contradicts himself not only within the limits of the same page, but even in the same paragraph, who copies indiscriminately, but copies wrongly, who evolves cases out of his inner consciousness, and proposes new names for diseases which he himself confesses never to have seen, is the phenomenon among medical writers on this side of the Atlantic.

However, with all these many and grievous shortcomings, there is one respect in which Dr. Hamilton has risen superior to the situation. His enterprise in securing a publisher for a work of this kind is proof of a degree of energy, persistency, and self-confidence which, if exercised in any other capacity than that of a medical author, would have led to brilliant results.

E. C. S.

The Physics of the Infectious Diseases. By C. A. Logan, A. M., M. D. 12mo.; cloth, pp. 212. Price, $1.50. Chicago: Jansen, McClurg & Co.

The author spent, recently, four years upon the west coast of South America, in an official position, which afforded him exceptional facilities for study and research. This region is remarkably exempt from infectious diseases, and this is attributed by the author to its remarkable physical features, which he fully describes and discusses.

Part I treats of the infectious diseases, their history, classification and geography.

Part II of the physical aspects of the Pacific coast of South America, and contains a large amount of information heretofore inaccessible.

Part III of the medical aspects of the Pacific coast of South America, with descriptions of its cities, etc.

Part IV of the physics of specific causation, comprising a discussion of the bacterial and other hypotheses; and the development of a theory by the author, in the discussion of which the questions of energy in general, the vital energy, the construction and functions of the nervous system, etc., are considered in an entirely original and novel manner.

Part V of the therapeutics of the infectious diseases, embracing suggestions as to treatment, founded upon the views of causation.

Part VI of the question of energy as related to general disorders of the nervous system, with suggestions as to general treatment. The volume is neatly published.

Practical Gynæcology—A Hand-book of the Diseases of Women. By Heywood Smith, A. M., M. D., Oxon. Philadelphia: Lindsay & Blakiston. 1878.

The object of the author of this little volume is to render the subject of gynæcology more easily understood, and to place it in the hands of general practitioners in such a form that it will be the means of helping them to a more accurate diagnosis and treatment of the diseases of women. It is burdened with no discussions on vexed questions of pathology, and gives at a glance the salient points of diagnosis and treatment with clearness and brevity. It is handsomely issued. Price, $2.00.

MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

Quinine to Prevent Surgical Shock.—In the "Virginia Medical Monthly" for August, it is stated that Dr. Hunter McGuire had seen a case of comminuted fracture of the ankle-joint, which was amputated two hours afterward with no appreciable shock. It was found, upon inquiry, that the patient had that day taken about fifteen grains of quinine. Dr. M., thinking that the shock was prevented by cinchonism, had been making some experiments by giving quinine before serious surgical operations, and had been led to think that slight cinchonism prevents shock of injury, or so lessens it as to make it inappreciable. If cinchonism will keep off shock, it is the opinion of the editor of the "Virginia Medical Monthly" that it is one of the most important facts in surgery. In the May number of the "Richmond and Louisville Medical Journal" for 1875, Professor A. B. Cook, in describing some cases of calculus treated by lithotomy, states that in every case, with the exception of one child, he had been in the habit of administering quinine at the rate of ten to fifteen grains a day for four or five days preceding the operation, and that the patients were greatly benefited by the treatment.

Compound Rhubarb Mixture.—At the Brooklyn Eye and Ear Hospital the following combination is found very useful:

		In each teaspoonful.
Take ext. rhei fl. (Squibb's)	256 minims	1 minim.
Ext. ipecac. fl. (Squibb's)	51 "	1-5 "
Sodæ bicarb	512 grains	2 grains.
Glycerine	12 ʒ	2-5 ʒ
Aquæ menthæ pip. ad	2 pints	3-5 ʒ, nearly.

M. Dose, one-half to one teaspoonful two or three times a day.

It is prepared for the hospital by Dr. Squibb. The fluid extracts used represent grain to the minim, so that each fluid drachm contains one grain of the best rhubarb and one-fifth grain of ipecac. (The difficulty of getting good rhubarb in ordinary prescriptions is well known.)

The above combination is used largely for children whose stomachs and bowels are out of order, where there may be a question whether a slight mercurial would not do well. It has

an alterative action, and in this way is truly a tonic. Adults receive it. It is easily taken, keeps indefinitely, has the great advantage over the aromatic syrup of containing no sugar to ferment in the patient's stomach (the glycerine tending strongly in the other direction), and the further advantage of the small dose of ipecac, equal to two or three drops of the wine and the alkali. Quinine may be added to it, in which case the fluid extract of licorice should be used to cover its taste; or, what is better than the quinine, the compound fluid extract of calisaya, as made by Dr. Squibb.—*Proceedings Med. Society County of Kings.*

Innervation of the Uterus.—Von Basch and Hoffmann ("Med. Jahrbuch," 1877, heft IV, abstract in "Gaz. Med. di Roma") have studied the innervation of the uterus in the dog with some interesting results. They refer the uterine nerves to two sources; one set from the union of branches from the posterior mesenteric ganglion and the inferior hypogastric plexus, and the other, the *nervi erigentes* of Eckhardt, from the sacral plexus. In forty-nine careful experiments on curarized dogs the following were the principal phenomena observed:

Stimulation of the hypogastric nerves constantly caused movement of the cervix downwards, and at the same time, but not always, the mouth of the uterus opened; both of these being, in the opinion of the authors, only passive results of the contraction of the circular fibres of the uterine neck, which was the immediate effect of the excitation of these nerves.

The *nervi erigentes* have undoubtedly a motor function. In many cases their stimulation produced shortening of the body and stretching of the neck and contraction of the vagina. It was remarked that during the stimulation a quantity of vaginal mucus exuded from the split vagina into the abdomen. The orifice of the uterus is always closed during the stimulation of these nerves; if open at the commencement, it closes. The authors consider the stretching of the cervix and closure of the mouth as passive results of the contraction of the longitudinal muscular fibres under the excitation of the *nervi erigentes*. These are therefore antagonists of the hypogastric nerves which act

on the circular fibres. The irritation of the lumbar cord has the same effect as that of the *nervi erigentes.*

Suspension of the respiration produces a movement of the cervix and opening of the mouth, phenomena referred to irritation of the hypogastric nerves. This effect is inconstant, but blood charged with carbonic acid excites the hypogastric nerves more strongly and frequently than the *nervi erigentes.* Excitation of the sciatic causes almost always complicated motor phenomena, but in most cases those dependent on the excitation of the hypogastric nerves predominate.

Although the movement of the cervix and the changes of form of the uterine orifice are thus shown to be dependent on these two sets of nerves, they may also occur independent of either of them. If the body of the uterus in repose is scratched with the finger or sound, the cervix will advance and the mouth dilate. This is brought about in a reflex way from ganglia in the upper portion of the vagina.

The vessels of the uterus are innervated by the same nerves which supply its muscular fibres. The hypogastric nerves supply the vaso-constrictors and the *nervi erigentes* the dilators. Stimulation of the hypogastrics causes a disappearance of the arterial and capillary injection of the uterus, the veins remaining full, and during the irritation the flow from a cut on the cervix becomes less and stops. The opposite effect follows excitation of the *nervi erigentes;* the organ becomes strongly injected, wounds bleed more freely, and the temperature of the body is slightly increased.

The vaso-constrictor fibres in the hypogastric nerves are derived from the splanchnic nerves; excitation of these nerves has the same effect so long as the hypogastrics are intact, but is ineffectual when they are divided.

Contraction of the uterine vessels may also be produced in a reflex way by irritation of the sciatic. In this case it also seems to depend on the hypogastrics, for if these are cut we have, not a constriction, but an active dilatation due to reflex influence of the *nervi erigentes.* When these last are divided, irritation of the sciatic is without effect on the vascular condition of the uterus.—*Jour. of Nerv. and Mental Dis.*

Treatment of Alcoholism.—At the New York State Inebriate Asylum, Dr. David H. Kitchen, the Superintendent, gives the following as some of the prescriptions which have proved to be most reliable:

℞. Acidi phosphoric dil., m. x; elixir calisayæ, ℥ss. M. Sig. To be taken at one dose, and repeated before each meal.

℞. Tincturæ nucis vomicæ, gtts. x; tincturæ cinchonæ co., ℥ij. M. Sig. To be taken in water before meals.

℞. Spt. ætheris sulph. co., ℥j; tincturæ nucis vomicæ, gtts. x. M. Sig. To be taken when the patient suffers from great restlessness.

℞. Extract hyoscyami, fld., m. xx; chloral hydrat., grs. xx; aquæ, q. s. M. Sig. For insomnia.

℞. Extract fluid hyoscyami, m. xxx. Sig. In insomnia, and repeat, if necessary.

℞. Extract fluid conii, m. xxx; potass. bromidi, grs. xx; aquæ, q. s. M. Sig. Repeat in cases of insomnia.

℞. Potass. bromidi, sodii bromidi, āā grs. xx; aquæ, q. s. M. Sig. To be repeated, if necessary, in cases of insomnia; particularly useful where there is marked restlessness.

It has frequently been observed in this institution that a single glass of milk, taken at bedtime, will produce the same effect as an anodyne or hypnotic, and, as a rule, we adopt this course before we prescribe medicine; often we prescribe medicine in milk. Experience has also demonstrated that the hot bath does more to relieve the unsettled condition of the nervous system than any medicine we can prescribe.—*Med. and Surg. Rep.*

Cure of Sciatica by Subcutaneous Injections of Ether.—Dr. C. G. Comegys reports, in the "Cincinnati Lancet and Observer," the successful treatment of a case of sciatica by means of hypodermic administration of ether, after the usual remedies had been tried in vain. Fifteen drops were first injected, producing great pain, which soon passed off. The ether in increasing doses up to thirty drops was repeated morning and evening for three days, when the patient was discharged cured. No local injury resulted. The injections were made in the ordinary superficial manner.

Indian Method of Transporting a Patient with Fracture of Femur.—Dr. B. G. McPhail, in a communication to the "Virginia Medical Monthly," says that an allied Apache soldier, in chasing a deer, fell and fractured the femur near the middle. His comrades prepared him for transportation in so simple and effective a manner as to be worthy of record. The leg was flexed upon the thigh and bandaged from the knee to the hip, thus making the leg act as a splint and support. A sling extended from the ankle to the opposite shoulder, and in this condition he was placed astraddle of a mule, behind a companion, and conveyed to camp without manifest pain.

MEDICAL NEWS.

'Nulla dies sine linea."

Mr. Farr, of Lambeth, England, ascribes great value to turpentine as an external application in small-pox. He claims that it at once relieves any smarting or irritation, effectually corrects the unpleasant odor given off in the more confluent form of the disease, and seems in a marked degree to arrest pustulation, thereby modifying and sometimes entirely preventing pitting. In consequence of its powerful antiseptic and disinfectant properties, it tends, moreover, to prevent the spread of the infection. Mr. Farr uses it in the proportion of one part of rectified spirits of the turpentine to three or four of olive oil, and applies it night and morning by means of a feather.——Dr. Robert Lewis Madison, Professor and Surgeon at the Virginia Military Institute, who died recently at that institution, was a great nephew of President Madison, and physician to General Robert E. Lee. ——A Mr. Nye, watchmaker, of Chatham, England, is suffering a month's imprisonment in Maidstone jail for refusing to have his children vaccinated. The "Press and Circular" says it is the seventh successive term of imprisonment for the same offence.——Dr. W. T. Goldsmith, of Atlanta, Georgia, has used with success the pith of the dried cornstalk as a uterine tent.

He compresses and introduces it much like sponge.——*Reversed Writing in Hemiplegia.*—Three cases are reported in a British journal ("Lea's Monthly Abstract") of reversed or mirror writing, the *spiegelschrift* of the Germans. They were hemiplegic patients, in two of whom the cerebral lesion resulted from aortic disease. In all, the paralysis was of the right side, and the writing was, of course, with the left hand. It could be read only in a mirror.——*Extraordinary Precocity.*—Dr. Horatio Yates, of Bingston, Canada, reports the following in the "London Lancet": "The child, a female, is two years and three months old. I was consulted by the mother, who supposed it had some mammary disease, there being a symmetrical enlargement of both glands. Struck by their appearance, I had the child stripped, and found what appeared to be a fully-developed woman." Abundance of hair on the pubes and in the axillæ. The genital organs, as well as the mammæ above mentioned, seemed to be fully developed. For the last three months the child has menstruated regularly three days every four weeks. She was flushed, and complained of headache and pain in the back and thighs while menstruating. She weighed forty-eight pounds.—*Canada Med. Record.*——*Cerebral Localizations.*—At the meeting of the Société de Biologie, Paris, April 6, 1878, Dr. Brown-Séquard declared himself more than ever opposed to the doctrine of cerebral localizations. The symptoms that have been attributed to the loss of function of cerebral centres are due to distant irritations. It is no more logical to attribute a certain function to a given part of the brain than to place the sense of vision in the intestine, because the presence of intestinal worms may cause amaurosis.—*Le Prog. Méd.* ——Dr. M. J. B. Messenger urges the value of cold water enemata as a therapeutic agent in chronic diarrhœa. He has found these cold injections astringent.———Dr. Draper, of Boston, gives the following statistics of physicians: Of 677 deaths of members of the Massachusetts Medical Society, during the last twenty-five years, the earliest occurred at the age of 21, and the latest at 95; the average age of deaths having been 58.84 years. The greatest number died at the age of 72, and the next largest number at 69. Among 1,260 deaths of physicians

recorded in the registration reports for Massachusetts for the past thirty-four years, the average age at death was 53.27.——*Nitrate of Lead in Epithelioma and in Onychia.*—G. Calletti states that he has recently effected a cure in three cases of epithelioma, in one of which the part affected was the nose, in a second the cheek, and in a third the sternum. The mode in which he applied the remedy was by dusting the powder over the affected part, and recovery took place when this had been done about four times. Two obstinate ulcers of the foot which had proved rebellious to other methods quickly recovered under the same treatment.—*Exchange.*

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

Position as Assistant Surgeon United States Army.—Young men desirous of a position in the Medical Department of the Army are informed that a Board for the examination of candidates for the position of Assistant Surgeon United States Army will be in session in New York City during the months of October and November, 1878. There are now eleven vacancies in the corps, so that those who pass the necessary examination may be sure that they will be promptly approved and assigned to duty. The assistant surgeons have the rank, pay, and emoluments of lieutenants of cavalry for the first five years' service, and of captains of cavalry after five years' service. All candidates for appointment in the Medical Corps must apply to the Honorable Secretary of War for an invitation to appear before the Medical Examining Board. The application must be in the handwriting of the candidate, stating age and birthplace, and be accompanied by testimonials from professors of the college in which he graduated, or from other physicians in good repute. Candidates must be between twenty-one and twenty-eight years of age, and graduates of a medical college, having a thorough and complete course of medical education, evidence of which must be submitted to the Board before examination.

RICHMOND AND LOUISVILLE

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. I.—*Conservatism in Surgery.* By R. G. JENNINGS, M. D., of Little Rock, Ark. [Read before the State Medical Society of Arkansas, May 1, 1878.]

Conservatism is a natural and safe principle of action in almost if not all the transactions of life. It appears unusually prominent at this time with Americans, and perhaps I might with propriety say with the great powers of Europe, politically, religiously, and socially. It is this principle that has lately, in this country, ruptured the shackles of extreme partisanism, and now may be said to shape the policy of our Government. This same principle has penetrated the narrow circle of religious bigotry, and placed the landmarks of salvation upon a broader plane, towards which the eyes of all true Christians are turned, unfettered by the severity of church discipline. It has softened the personal animosities engendered by war, and, in fact, is the great preservator of peace in the social circle throughout the whole world. In surgery, this principle is not only realized in its fullest sense, but it practically marks the course pursued in the management of each individual case. Taking this principle as our guide, let us illustrate, by a few pertinent cases, its application to practice.

CASE I.—*Incised Wound of Left Radial Artery.*—Not many months after I entered upon the practice of my profession, I was called in consultation with a Dr. Vincent to see a young man who the messenger represented to be "bleeding to death." It was then late at night, and I found the man almost exsanguinated; the loss of blood had been very great. The history of the case was soon learned. The man was a wheelwright by occupation.

Four days previous, while using a very thin, narrow paring chisel, he had incidently brought heavy pressure upon the instrument, and his foot slipping at that instant, the chisel was thrust forward and penetrated the left arm at the wrist, this arm being engaged in steadying the piece of wood upon which he was at work, and somewhat encircling it. There was very little bleeding at first, and regarding it as a slight flesh wound, the young man had walked over to Dr. V.'s drug-store to have it dressed. About this time some little swelling around the wound was observed, though nothing to excite suspicion of the instrument having penetrated the artery, so the Doctor placed a pledget of lint upon the wound, wet with cold water, and a piece of cloth around the arm, not bandaging the hand. The swelling extended rapidly, causing extreme pain, which was, in a measure, counteracted by repeated doses of morphia. The next morning the hand and arm to the elbow was extremely swollen and of a dark-purple color. Dr. V. now removed the first dressing, when considerable blood escaped for the first time, which gave the patient some slight relief. The bleeding ceasing of itself, a large compress and a roller bandage from the hand to above the elbow was applied. A comparatively comfortable day was passed, but the next night hæmorrhage returned, bursting out through all the dressings, and was only controlled when partial syncope ensued. The next morning Dr. V., assisted by Dr. Griswold, attempted to secure the bleeding vessel, but they being rather timid surgeons, and the hæmorrhage again ceasing, the wound was filled with lint saturated with Monsell's solution of iron and the same dressing reäpplied. That night hæmorrhage again returned, when I was requested to see the case. I found the man as already stated, almost bloodless, the bandage saturated with the vital fluid, the arm swollen to the shoulder, and emitting a sickening putrescent odor. There was great constitutional disturbance with fever, an anxious, anæmic countenance, with a weak, thready pulse. It was evident from the facts stated that the artery was wounded longitudinally, and not severed, and that the hæmorrhage had at first been checked by the internal coat of the artery contracting so as to cover the point penetrated; that the swelling was due to the infiltration of the cellular tissue with blood; that from this cause the bleeding had assumed periodicity, which had continued until the contractility of the vessel had been destroyed, and that now there was complete infiltration of all the soft structures. I advised imme-

diate operative procedure to secure, if possible, the bleeding vessel; exhibited the great danger in delay on account of the critical condition of the case, the almost certain mortification of the arm should there be no poisoning from absorption of the disintegrated blood, bandaged tightly as it was to prevent hæmorrhage, though this was but an ineffectual barrier to the fluid. This was agreed to; chloroform was administered, the bandage removed, and the whole extent of the arm found deeply discolored, imparting a lifeless feel to the hand, almost akin to that of the dead body. The brachial artery was held by an assistant, and an incision made over the track of the radial artery six inches in length. The artery was found completely disintegrated, and so soft as to break easily when seized with the forceps. The tumefaction of the arm was so great that in following up the artery the original incision had to be extended several inches, in fact, fully to the elbow-joint. No portion of the artery was found sufficiently firm to admit a ligature until I was fearful I was not over an inch and a half from its bifurcation with the ulna artery. I began now to despair of success. I felt that it would not do to go much further, and I confess I was at a loss what to do. My confréres advised amputation of the arm above the elbow; this I had promised the patient not to do. As I had previously determined to expend every effort to save the man his arm, I renewed my efforts to apply a ligature around the artery at the point I had reached, but laboring under the difficulty of an imperfect light, amid deep structures extensively swollen, I signally failed after three unsuccessful efforts. At this juncture a thought struck me that I might be able to form a clot or plug by the application of a caustic. Acting upon this idea, I passed a point of the nitrate of silver directly into the end of the artery, pressed a pledget of lint firmly against it, brought the edges of the long-incised wound together, retained them by interrupted sutures, leaving a small opening above the lint, over which I placed a good compress, and bandaged the arm tightly from the ends of the fingers to the point where brachial artery was held. At this point a tourniquet was applied so as to diminish the force of the blood current. The patient rallied slowly, and rested well that night. The tourniquet was continued several days, but was carefully watched to prevent injury. The pledget of lint was cautiously removed as soon as the suppurative process became fully established. Union by the first intention was partially obtained, and as there was no recurrence of hæm-

orrhage and not a single unfavorable symptom, the wound very soon healed, and the man retained perfect use of his arm.

This case exhibits the perplexities and uncertainties attending the ligation of an artery under peculiarly adverse circumstances. At the commencement of the operation none of these troubles could have been anticipated, or in this manner expected. Again, the easiest way out of this perplexity was the amputation of the arm above the elbow, as it certainly offered the speediest and most certain result. Individually, however, I could not for a moment entertain the idea of depriving this hard-laboring mechanic of a most necessary member, and happily the problem was solved without such a procedure. This was conservatism in reality, and with a termination the most satisfactory.

Case II.—*Case of Railroad Injury.*—A wheel of the tender completely denuding the plantar surface of the left foot and passing over the left arm above the elbow. April 20, 1877, Wesley Henry (colored), aged about fifteen years, while carelessly standing upon the side-track at Barring Cross, was run over by the backing of a switch-engine to wood. He was immediately taken up, placed in an express wagon, and transported to my office, and a cursory examination disclosing no special danger of fatal hæmorrhage, he was conveyed to his home, whither I repaired, accompanied by Dr. S. D. Dodge, who accidentally happened to be at my office. Attention was first directed to the foot. The soft structure of the plantar surface of this foot was found irregularly torn away, commencing fully one inch above the base of the heel upon the posterior portion of the os calcis, completely denuding this bone, and extending forward within one inch of the phalanges of the toes, where this fleshy mass remained attached by the skin, cellular tissue, and some muscular fibres. The solution of continuity, although presenting a very jagged appearance, had crossed the instep nearly upon a parallel line, reaching up the side of the astragalus somewhat, but dropping down upon the cuboid and metatarsal bones, leaving the deeper layer of muscles uninjured. This detached mass turned back upon the toes was much thicker upon the inner than upon the outer border of the foot. There was considerable oozing of blood, but no active hæmorrhage, the cut or torn parts resembling somewhat the action of the écraseur, though more irregularly mutilated. Altogether, there had been a pretty large quantity of blood lost. The os calcis gave evidence of having received a severe scraping, but was

not materially injured. It was questionable whether there remained sufficient vitality in the severed portion to admit of union. It was not impossible, and it was deemed best to make the trial. The severed portion was accordingly replaced in its original position and firmly secured by deep sutures wherever practicable, adhesive straps, a compress of cotton saturated with carbolized glycerine, and bandage. These were kept constantly wet with ordinary cold water containing a small percentage of carbolic acid. This dressing was not disturbed for several days; not until there was positive evidence of an accumulation of pus in the wound. The dressing was then removed, and the muscular structure that had not been badly mutilated found to be adherent. The heel and other portions of the skin and cellular tissue were dead and sloughing. These were removed by the scissors, and the wound dressed with common lint-cotton saturated with carbolized glycerine, the bandage reäpplied and kept wet as before. This was the only dressing used until the deep places, caused by sloughing, were granulated even with the sound skin; then the carbolized cerate was substituted for it, and kept cool by a few folds of old cotton cloth saturated with cold water. The wound healed kindly, but it was a long time before it became entirely well, and even then the heel remained tender until the last month before he was able to walk upon it with any degree of comfort.

After completing the first dressing of the foot, attention was directed to the left arm, which hung as though nothing but the skin held it. The humerus of this arm was squarely cut off about one inch above the elbow-joint, and from one and a half to two inches above, the other end of this bone could be felt squarely cut off; yet, strange to say, the skin was not even scratched. The space between the ends of the bone was soft and mushy, so that not a spicular of bone of any size could be detected by the most careful manipulation. At first, I could not conceive how such a singular injury could have occurred, for I could not believe that the wheel of the tender could have passed over the arm without either severing the skin, or at least making some kind of a lesion in it. Yet the evidence was so overwhelming and positive, I felt constrained to accept this as the only rational solution of the problem. Here was a space just the width of the surface of the iron rail gone entire, so that only the impression of small particles of calcareous material was conveyed to the fingers amid the

soft, mushy muscular substance. The temperature of the arm below the point of injury was good. The pulse at the wrist was at first imperceptible, but a prolonged examination gave an occasional sensation to the finger that could not be attributed to other than an effort at returning circulation. Could the bone be resuscitated, was the periosteum destroyed, and in what manner could the arm be dressed so as to accomplish this object? were the first questions that presented themselves. I put these questions to Dr. Dodge as they occurred to me, answering them myself, that I believed the bone would resume its form and shape under favoring circumstances; that the periosteum had not been destroyed, and that the best dressing I could conceive would be the starch bandage, in all of which Dr. D. concurred. Two thicknesses of old soft flannel were nicely fitted to the arm; a bandage from the hand was continued over this, followed by a thick layer of starch, and enveloping this two thick pasteboards, previously molded so as to embrace the arm. Over all this a sufficient amount of starch and as many turns of the roller as were thought ample to form a solid protecting covering when cold, and the arm rested upon a pillow. A pretty high fever followed for several days, but subsided under appropriate treatment. Nothing like an abscess occurred. The bandage became somewhat loose, but not enough to give any great play or motion to the bones, as there was very little swelling when it was applied. It was, however, slit open after some twenty days, and brought to enclose the arm more firmly. When removed altogether, the crushed portion of bone was found somewhat larger than natural, and the end of the bone near the elbow not perfectly in apposition. This had gradually changed, and although there still remain irregularities in the union, the arm to-day is as good as the other for all practical purposes; indeed, he can lift as much with it, and handle it as well.

This was, altogether, a remarkable case, and illustrates the recuperative power of nature when placed under favoring circumstances.

Case III.—*Gun-shot Wound of Right Tibia, causing Compound Comminuted Fracture of this Bone.*—W. T. Ashby was shot on the 16th day of April, 1876, in Montgomery county, with a Colt's navy-six, the ball striking the middle third of right tibia, shattering this bone. Dr. Cubage, of Mt. Ida, saw the case, removed some of the fragments of bone, bandaged the leg, and applied a splint to it. Nothing like union resulted, and not the least benefit

was derived therefrom. On the 10th day of August following he was brought to Little Rock and confined in the State penitentiary for a criminal act of some kind. This institution was then under the medical charge of J. H. Lenow, M. D. I saw the case with Dr. L. in September of this year. The bone was then not only ununited, but quite a portion of both ends in a carious condition, emitting a very repelling odor and a profuse discharge of pus. I proposed a resection of the diseased portion, and the next day operated, assisted by Dr. L. The man was brought under the influence of chloroform, and a longitudinal incision made over the diseased part down to the bone, some seven or eight inches in length. The caries of the distal end extended into the lower third of this bone. Both ends of the bone being resected, and fully four inches of the tibia removed. This space was filled with lint-cotton saturated with carbolized glycerine. The edges of the wound were brought together and retained by sutures and adhesive straps, except a sufficient opening for free drainage, bandaged, and kept continually wet with carbolized water. The operation was performed in the hospital of the State penitentiary, an imperfectly ventilated room, crowded with occupants afflicted with various kinds of diseases. This room had been used for hospital purposes for years; hence, under such surrounding circumstances, everything but favorable, the progress of this case could not be otherwise than tedious, and the result extremely doubtful. The wound granulated slowly, some days improving, and again presenting an unhealthy appearance, which would be corrected by Dr. L. with the means at hand as best he could. Amid these adverse conditions, this case survived them all, and the wound finally healed.

During this prolonged contest of nature with opposing poisonous elements, the muscles of this leg became atrophied from the excessive drain incident thereto and its long rest in Smith's anterior splint, until it did not appear half the size of the other. As was to be expected, his general health also suffered severely; the long confinement to his bed upon his back; the continued exhaustive discharge; the adverse circumstances surrounding him; the mental depression arising from a sense of his condition; the prospect of years to be spent in prison, and the lack of proper nourishing food, all tended to depress a system already taxed to its utmost extent. After the wound was healed, a supportive bandage and side splints enabled him to enjoy the purer air of the

yard, and since then his improvement has been somewhat more rapid.

I saw him April 10th. The leg had then recovered its former size and much of its original tone and vigor. There was some deficiency where the resected portion was taken out, but the greater part of this was filled with a hard, bone-like substance within a half inch of the upper end of the remaining tibia. He could put his foot down squarely upon the ground, bear his weight upon it, swing it forward without inconvenience, and, in fact, had a much better use of it than I thought he could obtain in the length of time and under the circumstances. He can now walk very well with the aid of a crutch. From the improvement so far, I have every reason to believe, in time, this will be a very serviceable limb to him; far better than a wooden one, for he will soon walk upon it without any support.

Had he been where he could have commanded pure air, good nursing, and good nourishing food, I doubt not his recovery would have been everything that could have been expected from so serious an operation. As it is, I regard it as a success. I have reported this case, perhaps, more minutely than I should have done, to illustrate the object and purport of this paper. Besides, surgeons generally regard extensive resections of the larger bones of the lower extremity as of doubtful propriety and of questionable success.

A few days after this operation, I made a verbal report of it to the College of Physicians and Surgeons of Little Rock, exhibiting the portion of the bone resected. The operation was regarded with disfavor, every member present expressing himself opposed to it, and in favor of the amputation of the limb. It was their opinion that not the least benefit would or could ever be expected to follow such an operation, as all disbelieved that new bone would re-form in the resected portion, or it be filled up with any substance capable of supporting the weight of the body. The leg was regarded as a useless appendage; that it would always be in the way, and would prove a veritable nuisance. I confess I felt a little mortified at the opposition to this operation, and never mentioned the subject again, though my faith in a successful result of such resections never once wavered.

This spring I made a similar resection upon the tibia, and again met with the same opposition from the members of my local society. Feeling that I might not have been fully justified in

either of these operations, I took the trouble to go personally to the penitentiary and hunt up the man Ashby, and by an ocular examination determine for myself what good, if any, had resulted to him. The true facts in the case have already been given you, and it fully demonstrates the efficacy of conservatism in surgery. I may, perhaps, here remark that the second case is progressing favorably, with the very best prospects of a satisfactory termination.

Case IV.—*Injury to the Left Foot by a Car Wheel.*—September 6, 1876, J. C., aged seventeen years, while attempting to steal a ride on the cars over the bridge of the Arkansas river at Barring Cross, missed his hold, and in falling his left foot was run over by a wheel of a car coach. He was taken to the L. B. R. Hospital, and placed under the care of Dr. J. H. Lenow. I saw the case three or four days after the accident with Dr. L. The whole foot was then much swollen, while an inflammation of an erysipelatous character not only involved the foot, but extended above the ankle-joint. The toes and skin of the foot were discolored, without sensation, and little perceptible vitality. It was impossible, under these circumstances, to define the exact line of demarcation between the sound and the injured tissues. Here was a question of amputation. Some of the parts were of exceedingly low vitality, if not dead, and they ought to be removed. But where would you amputate? Hays' operation could not be advised, as all the structures in the metatarsal portion of the foot were undoubtedly involved. Then why not adopt Chopart's operation? The astragalus and calcaneum seemed to be unimpaired. But even here uncertainty existed; and, in fact, would any kind of amputation be justifiable in any injured member presenting positive evidence of an erysipelatous inflammation? Certainly it would not. In this instance we would be entering a very complicated joint, where the results of surgical interference at best are unsatisfactory. An operation therefore at this time would be altogether contrary to every principle of surgery. Accordingly I advised appropriate treatment to combat the inflammation, and at the same time to favor the process of sloughing of the sphacelated structures until the line of separation between the living and the dead tissues could be well marked. This process proved rather a slow one. The inflammation, however, gradually yielded to treatment, and became circumscribed. The phalanges of the foot dropped off, which became positive that the metatarsal if not the cuneiform

bones were also involved. The soft tissues of the superior portion of the foot sloughed, while those of the plantar surface recovered their healthy vigor. When this point was reached it was determined to operate, with a view to save as much of the foot as possible. The patient was chloroformed by Dr. L.; upon removal of the metatarsal bones, the cuboid and cuneiform bones were found more or less injured. These were removed, leaving the schaphoid, calcaneum and astragalus. A short, stout flap was formed from the plantar surface of the foot, and nicely fitted to the pared surface above. This was firmly secured with interrupted sutures, adhesive straps, well bandaged, and ordered to be kept wet with cold carbolized water.

Although this case was in a room occupied by a number of patients suffering from miscellaneous diseases, union by the first intention was nevertheless obtained, except two places where some sloughing occurred. These places gradually filled by granulations, and the boy left the hospital July 10, 1877, with an excellent stump; a very serviceable one to him, as he could walk very well upon it without artificial aid.

Here amputation above the ankle-joint would have been far more convenient to the surgeon, and when seen immediately after the occurrence of the accident, and before the erysipelatous inflammation supervened, in nine cases out of ten in ordinary country practice this would have been the operation performed.

Chopart's operation is generally believed to be more difficult than a plain amputation, as the former disconnects the articulation of a joint when the consecutive inflammation is thought to be much greater, the recovery prolonged and tedious, and the final result much more uncertain. The termination of this case under the adverse surroundings disproves this idea, and shows that operative proceedings in articulate surfaces are just as susceptible to treatment, and just as certain in the final termination as an ordinary well-selected stump amputation.

Xanthum Spinosum—Spring Bur-reed. Grows in Europe. The plant is a powerful diaphoretic, and is said to cure hydrophobia. It is supposed to neutralize the effects of the virus of rabies.—*Med. Record.*

ART. II.—*Analgesia by Hypodermic Medication.* By JULIAN S. WOODRUFF, M. D., South Carolina.

As I feel it incumbent upon each one of us to contribute something that may be of interest to the Profession, I have selected for my subject Analgesia—relief from pain—which a distinguished philosopher has said "constituted the highest pleasure of which human nature is susceptible."

The physician who by his ability to cure pain or even to palliate or mitigate suffering, gives to the human race a priceless blessing, which enhances his value and importance to his patients, is thoroughly appreciated by the most ignorant and illiterate as well as by the most refined and cultivated, and elevates him in his own estimation as he receives the grateful thanks of his fellow-beings.

Pain, then, which the Latins called *dolor*, *angor*, *cruciatus*, *cruciamentum*, etc., is what man has to suffer from his nativity to his dissolution, the greatest preventive to his happiness, and, indeed, to his usefulness in this life. To the discovery of a remedy for relief from pain, thousands both in and out of the profession have been looking for and seeking after it; this object has engrossed all the ingenuity and inventive genius of man's mind.

I will first inquire how is pain arrested, relieved or cured? I answer, by the administration of an analgesic, which obtunds or deadens "cerebral receptivity" and "nerve conductivity"; this condition is produced without cerebral inactivity or sleep resulting; an infinitesimal dose, hypodermically, producing the former, a much larger quantity causing the latter.

The greatest nerve sedative we have in our materia medica is opium; "it is certainly antagonistic to the effect of pain, and it removes it not only by its effects upon the encephalic centres, but by its influence upon each nerve fibril, along which the pain-producing impression travels, and upon every nerve-cell through which this impression passes. The consequence is that the impression transmitted from the periphery is diminished as it travels until when received in the brain it is reduced below a pain-producing point, the effect of opium on the cerebral centres being *a factor* in the production of this result."

Atropia is thought by Schiff and Heidenhain "to paralyze the terminal branches of the nerves." Harley, on "the old vegetable neurotics," 1869, says its action is that of direct and powerful

stimulation of the sympathetic nervous system, and it may be regarded as the only one.

Bartholow, in his prize essay, finds that it produces "a rise of temperature to the amount of a degree," and George B. Wood (my former preceptor) in his great work, Therapeutics and Pharmacology, says it powerfully affects the cerebral centres as well as the sympathetic nervous system. For the relief of pain, he continues: "I know few remedies more effectual in their cure, no matter where the pain is seated"; and in speaking of its effects on the nervous peripheries, he says it is sufficient "to suspend their function, and, as it were, to put them to sleep."

I could cite many other first-class authorities with reference to the analgesic properties of morphine and atropine. I will only mention one other. To that courteous gentleman and distinguished physician, William A. Greene, of Americus, Ga., I am deeply indebted for his admirable address before the Georgia Medical Association in April, 1871, on Hypodermic Medication. That address opened up a new and inviting field for experiment and research. Many physicians of my acquaintance who had never before seen a hypodermic syringe, got one and began this practice, solely through Dr. Greene's recommendation and advice.

I certainly think that gentleman merits the gratitude of every practicing physician, for I consider him indisputably the father of hypodermic medication in these United States.

When morphine and atropine are combined in solution and injected under the skin for the relief of pain, its instantaneous effects are truly wonderful and charming.

I have many times been called to a case of uterine colic, finding the patient in great agony, the knees and chin touching. An injection of this combination subcutaneously has, in *three minutes*, extinguished all pain, the patient straightening out and laughing and talking; a most wonderful metamorphosis. To be full of pain, and then to lose one's pains, is certainly excessively pleasant both to the physician and patient.

I will now append a few cases of pain instantly relieved out of several hundred.

Case I.—Charles Fernandez; lumbago. On the 30th of June, 1876, he gave up work and came to me for relief; intense agony in lumbar region; could not pick up anything on the ground without excruciating pain; could not get up after seating himself in a chair. Injected over seat of pain one-fourth of a grain of

morphine and the one-seventy-second of a grain of sulphate of atropine. In *three minutes* perfect freedom from all pain, although I shook him and wrenched his back in the most violent manner, made him dance, run, and jump with like result. Have seen him often since; the pain had never returned.

Case II.—Mrs D. S. Huffstickler, a married lady, twenty-five years old, always suffered intensely at each of her monthly returns. I was called to her at midnight on the 13th of November, 1876. Found her in great agony; knees and chin touching; had attended her in several other attacks. As soon as I entered her chamber, she called out: "Oh, Doctor! put some morphine and atropine under my skin and relieve me from this suffering." I injected half a grain of morphine and the thirty-seventh of a grain of atropine. In *three minutes* all pain was extinguished. She straightened out her limbs and talked and laughed as if nothing had been the matter.

Case III.—Wm. Macabee. Was called to him on the 24th of October, 1876. Intense pain in lumbar region; a ditcher by trade; pain in lumbar muscles so excessive as to deprive him of sleep for five nights; had tried all the various domestic remedies; had sent for a physician, who prescribed *a red pepper poultice!* As soon as I got to him I injected half a grain of morphine and the thirty-sixth of a grain of atropine. *Instant relief.* Saw him repeatedly since, and though he follows his trade as a ditcher, he has never had a return of the pain.

Case IV.—Phillip Morgan came to my office on the 30th of August, 1876, complaining of intense pain in right shoulder and breast for *six years* (so he said). The pain had increased to such a degree that he had to knock off from work (he was a brick-molder) and come to me for relief. I injected one-quarter grain of morphine and the one-seventy-second of a grain of atropine. In *three minutes* all pain had been extinguished, and he could move his arm and shoulder in every direction without a particle of pain.

I could go on repeating scores upon scores of similar cases, but will not encroach upon your time and patience.

I wish to express my indebtedness to several of the medical journals of the day for many facts I have herein mentioned, and particularly to Dr. William A. Greene's paper on Hypodermic Medication, written in April, 1871.

ECLECTIC DEPARTMENT.

"Carpere et colligere."

ART. I.—*On Gonorrhœa.* By F. N. OTIS, M. D., Clinical Professor of Genito-Urinary Diseases in the College of Physicians and Surgeons, New York City. [A Clinical Lecture delivered at the College of Physicians and Surgeons, City of New York.]

Gentlemen,—To-day we enter upon a consideration of the third and last in the list of venereal diseases alluded to in the opening lecture of our course, viz.:

Gonorrhœa.—Gonorrhœa is a vicious, non-specific, contagious, inflammatory disease of the mucous membranes.

It is characterized by free purulent secretion without ulceration, occurring chiefly in the mucous membrane lining the urethra in the male, and the vagina and urethra in the female; and occurring exceptionally in the mucous membrane of the rectum.

By transference through *mediate* contagion from these points, the disease may be conveyed to the mucous membrane of the eye.

The occurrence of conjunctival gonorrhœa is by means of *mediate* contagion; that is to say, by the application of the poison through some intermediate substance, as the fingers, sponges, cloths, etc. This is one of the gravest accidents that can occur in consequence of gonorrhœal affection.

The transfer of the disease in the same manner to the nares and to the mouth is alluded to by authors, but I have never seen such cases, and believe they are so rare that, practically, we need not give them much consideration.

This disease is termed *vicious* on account of the acuteness of its onset, as compared with idiopathic or traumatic inflammation of mucous membrane, and from the greater disturbance, local and general, which marks its course.

It is termed *non-specific*, because it is capable of being originated by a variety of causes quite independent of a gonorrhœal origin, and even of the venereal act.

This is an important statement, but one which is capable of

thorough substantiation by clinical proof, as will be shown hereafter. It is, however, as a matter of course, denied by those claiming a specific venereal virus as the essential, the one sole efficient agent in the establishment of a true gonorrhœa.

The disease is called *contagious* and *inflammatory*, because pus, the product of this variety of inflammation, when brought in contact with sound mucous membrane, sets up in it at once an inflammatory process of a similar character.

It is usually communicated through illegitimate venereal contact; yet a similar inflammation of mucous membrane, producing pus which possesses equally the element of contagion, may arise from causes purely inflammatory. Thus, mechanical irritation, caused possibly by the introduction of a urethral sound, may set up an inflammation producing a purulent secretion, which, when brought in contact with healthy mucous membrane, will develop a disease in no respect different from acute gonorrhœa the result of venereal contagion.

Allow me to relate a case which bears upon this point. Some four years ago a gentleman came to me suffering from irritation at the neck of the bladder, as evidenced by discomfort in that region, and also a certain amount of irritation in the glans penis. He was a man entirely above suspicion of illegitimate venereal indulgence. He was under my direct observation for at least four or five months before I came to the conclusion that his difficulty was dependent upon the influence of a contracted meatus urinarius. I had already made a thorough examination with reference to the presence of stone in the bladder and prostatic enlargement, and found neither. I incised the meatus so that the contraction was completely removed, and with it immediately, to my great satisfaction, the frequency of micturition ceased, and all sense of discomfort disappeared. The only after-treatment necessary was in keeping the opening patent. An ordinary sound was introduced some four or five times. The case was doing very well; but the gentleman had a large business to look after, and, finding it exceedingly inconvenient to come to my office, begged the privilege of using the sound himself. I objected, and yet yielded to his wishes, inasmuch as I did not see why he should not be able to perform

the operation, if a reasonable amount of care was exercised. I gave him a new instrument, a solid-glass rod of proper size and shape, and directed him to pass it well through the meatus every morning, and to do it carefully.

At the end of about a week he came to me with his penis considerably swollen and inflamed. A slight muco-purulent discharge was exuding from the meatus. In reply to my inquiry, he stated that he found some difficulty in introducing the instrument; that this increased daily, until finally, "determined not to be beaten by it," he had carried it in with some degree of violence. The condition which the penis presented was the result. Nothing could be more certain than that this inflammation was the result of mechanical violence. The inflammatory action increased and extended as in an ordinary gonorrhœa resulting from an impure venereal contact, and finally involved the deeper portions of the urethra. He was even threatened with prostatic abscess, but after confinement in bed at least four or five weeks, he recovered with slight remaining discharge. This discharge continued for some time; it was exceedingly slight. Thus far the case would have been placed under the head of ordinary simple urethritis, which by many is considered as entirely different from gonorrhœal urethritis, and especially so as lacking the element of contagion.

During the summer the discharge from the meatus disappeared almost entirely, and under the impression that there was no danger of communicating his disease, he had a single connection with his wife.

About two weeks after, the wife came to me suffering with a well-marked, acute *vaginitis*, which had extended to the urethra. She was a lady over fifty years of age, and entirely above reproach. To my mind, there was no doubt whatever but that she acquired the disease from her husband, whose disease was of traumatic origin. The result of this intercourse was a disease which could not be distinguished from that which is acquired from a known gonorrhœa. I have, besides, seen several cases which, equally with the one now related, go to prove that a contagious secretion from mucous membrane may be present as the result of simple causes wholly independent of contagion.

Gonorrhœa Identical with Infantile Leucorrhœa.—Another cause of an inflammation of mucous membrane, which does not vary in any practical degree from gonorrhœal inflammation, is infantile leucorrhœa. This is recognized by all authorities as a contagious disease of the mucous membrane. A similar vaginitis may be communicated from it to other children, when the same sponges or bathing-cloths are used, and an ophthalmia is not rarely set up by means of it, which can not be distinguished from true *gonorrhœal* ophthalmia.

This form of leucorrhœa is caused, as generally believed, by irritation in a contiguous organ, the rectum. It has also been attributed to the irritation produced by teething. But, whatever the cause may be, an inflammation is set up in the vagina of the infant which produces a discharge that can not be distinguished from a gonorrhœal discharge, and which may communicate a similar disease.

Some time since a lady called upon me, accompanied by her little daughter (between nine and ten years old). She stated that the child was suffering from a *bad disorder*, which she believed had been communicated by a young man intimate in the family, who had been in the habit of playing with the little girl. The visit to me was for the double purpose of obtaining relief for the child and securing some advice as to the way of punishing the young man. On examination, the vulva was seen intensely reddened and bathed in a profuse, greenish, purulent discharge. The hymen was perfect, with no sign of injury. The integument around the anus was irritated as if by scratching, and great itchiness in the vicinity was complained of. The rectum was found loaded with ascarides. The cause of the leucorrhœa was thus satisfactorily explained without implicating the young man. Suppose, however, the youth had been subjected to an examination, and had chanced to have had an old gonorrhœa, the probabilities would have been greatly against his being able to establish his innocence before any jury.

Here we see that the question as to the specific character of gonorrhœa may become of first importance from a *medico-legal* point of view.

Gonorrhœa Produced by Injections.—During my term of ser-

vice as Resident Physician on Blackwell's Island, twenty-five years ago, several experiments were made with reference to the question of the causation of gonorrhœa by other means than by contact with gonorrhœal discharge. At the instance of Dr. William Kelly, Physician-in-Chief, various materials were injected into the urethra of healthy individuals, but without satisfactory results, so far as producing gonorrhœa was concerned. Finally, the experiment was made with pus taken from the eye of a child suffering from acute ophthalmia, and a virulent gonorrhœa was established, which continued for four or five weeks, and was attended by the ordinary complications of gonorrhœa, œdema, chordee, etc. Here certainly the disease was produced entirely independent of gonorrhœal contact.

Gonorrhœa Produced by the Discharge Accompanying Stricture.—There is still another cause of gonorrhœa that must be mentioned, in order to make this part of our subject complete. It is a very important fact that a discharge which does not at all differ from true gonorrhœa may arise through contact with the discharge produced by the mechanical irritation incident to *stricture of the urethra.*

A man who has a stricture, but has had no discharge whatever from the urethra for several years, is suddenly placed in circumstances under which an unusual amount of excitement is present in the circulation of that locality; for example, he gets married. A few days after marriage—and I am not now drawing upon general experience or imagination, for I am relating the history of a real case—the man discovers that he has a discharge from his urethra precisely similar to one of his early gonorrhœas. Naturally enough, he does not associate the presence of the discharge with the fact that he had disreputable connection, followed by disease, some years previously. The only explanation which seems possible is, that it has been contracted from his bride. He becomes greatly excited, but before openly disgracing the apparent criminal, he goes to his physician to secure a trustworthy witness of her guilt. The physician, however, knowing of certain wild oats sown in earlier life, tells him to pause before he concludes that his wife has been unvirtuous. An examination is made, and unmistakable evi-

dence of *stricture* is found. The conclusion is readily reached that it had been in existence for some time. This becoming appreciated as a sufficient cause of the trouble, the man at once gives up all suspicion regarding the impurity of his wife.

Within a few days, however, the *wife* begins to complain, and very soon has a sharp attack of vaginitis, and then comes her turn to enter complaint. The discord, however, is finally harmonized through an understanding that the original difficulty with the husband had been acquired several years before. The fact which I wish to make clear is this: That by excess in drinking, sexual intercourse, mechanical irritation, etc., a simple purulent discharge may be elevated to the point of contagiousness; that when raised up to that point it is no longer simple, and will communicate gonorrhœa when brought in contact with healthy mucous membrane.

Inflammation of Mucous Membrane.—Before proceeding farther with our subject, it will perhaps be interesting to study the subject of inflammation of mucous membranes somewhat in detail.

Mucous membrane is made up of several layers; the uppermost or epithelial, the basement membrane, and the areolar-tissue layer. In the mucous membrane of the urethra the epithelium is chiefly in the form of laminated scales, and the secretion which is associated with it is the result of the gradual development of this scaly layer. Formative germinal cells come up laden with germinal juices, which, as the cell develops into the epithelial scale, exude and lubricate the canal, thus protecting it from the action of the acrid secretions that pass over its surface. This is the natural process by which the fluid is obtained that is necessary for lubrication, and the quantity in health is never sufficient to constitute a discharge. Any *discharge* from the urethral mucous membrane is pathological, with a single exception, and this is the slight transparent exudation from the meatus urinarius, which sometimes comes on through venereal excitement. In the normal development of the epithelial layers there is just enough material furnished for the gradual development of the germinal cell into the complete epithelial scale. But set up an irritation, and nature responds to

such irritation by sending up an excessive supply of "pabulum." The upper layers of cells are detached with greater rapidity than in health, there is consequently an increased quantity of mucoid or lubricating material thrown out, and we have the first signal that a pathological process is coming on. This process continues, and within a short time the germinal cells appear upon the surface of the mucous membrane as a discharge. If you examine a urethral secretion when inflammation is present, you will find it to consist largely of cells which to all appearances are the same as the white-blood corpuscles, they are not normal white-blood corpuscles, however, but cells which have been emasculated by too rapid development. They retain the power of proliferation and movement, but they are incapable of elevation into useful tissue, and finally emerge from the urethra as a discharge that is called pus. These cells may appear in such quantities that we see them as a profuse discharge, and in the highest stage of inflammation this discharge has a greenish color, which indicates the additional presence of red-blood corpuscles.

Beale says that when this inflammatory process has gone on for a little time, a kind of proliferation of cells takes place upon the surface in addition to those which come up from the tissues beneath, and that the rapid disintegration of material produced in this manner gives rise to the infective element of the discharge. Cells thus proliferated constitute what he terms *disease germs*, and he claims that they may be produced in this manner; that they retain life with great tenacity, and may be carried for a long distance, and yet when brought in contact with a healthy mucous membrane, will set up an inflammation of like character as that from which it originated. Whether this view is correct or not (and we will consider it at a later period), we have sufficient knowledge to state that pus, under certain circumstances, becomes highly irritant and contagious; that a mild form of inflammatory product may become changed to that which is contagious. The theory advanced would certainly explain the contagious character of gonorrhœa, and also the different varieties of the disease with which we meet.

You will remember that last week a man came before us who

had a profuse purulent discharge from the urethra. That discharge was acquired through venereal contact about five or six days before his visit here.

On questioning him, it was found that he did not suffer from pain at all, and that except for the discharge, he was not able to say there was anything the matter with him. At the time I called your attention to the fact that it was one of the milder varieties of gonorrhœa. There was, perhaps, no question regarding the origin of the disease, and yet I doubt very much whether that discharge would, if placed in contact with healthy mucous membrane, have communicated gonorrhœa. The grade of inflammation was low, and so low that it is a question whether its products were capable of establishing an inflammation of like character. But let that man go on a drunken spree, or have excessive sexual intercourse, you would find that his discharge would become painful. If, then, it was brought in contact with healthy mucous membrane, you would see developed a corresponding discharge, and an active contagious property would be present. There are, therefore, two varieties of the affection: 1. That in which there is a slight, painless, purulent secretion. 2. That in which a higher degree of inflammatory action is present, which gives rise to pain and a greenish purulent discharge.

A man may come to you complaining of an almost white purulent discharge, and at the same time saying that the connection had been with a woman whom he knew to be free from gonorrhœa. Perhaps the additional statement will be made that she was suffering from the "whites," or that she had just completed her menstrual period. If you do not interfere with the discharge, it will disappear in four or five days, as a rule, and the man will be well. But the trouble is that, as soon as a man sees a drop of pus at the meatus urinarius, he goes to a doctor, who attempts, in a great many cases at least, to abort the gonorrhœa. A solution of nitrate of silver is employed as an injection, and if that is kept up for four or five days, a sharp urethritis is usually established. I do not believe there is any such thing as aborting true gonorrhæa. Gonorrhœa runs its course, and lasts about four weeks, and any urethral discharge

that exists for a less period, I should be willing to say was not gonorrhœa.

I have seen a large number of urethral strictures, and I have made it a point to look up their origin, and to learn concerning the disease which gave rise to them, how the gonorrhœa was acquired, and how it was treated. I have not yet found a single case which recovered within four weeks, where the symptoms were such as to convince me that the patient suffered from a gonorrhœa *that had been acquired from a gonorrhœa.* In every instance in which the evidence was positive upon this point, the gonorrhœa had lasted at least *four weeks.* There are many cases of gonorrhœa in which the patient, on account of his youth or extreme modesty, neglects to seek professional advice, and yet these very ones pass through their trouble in about the same time as those who avail themselves of eminent professional service. I do not give much credit to the plans which have been brought forward for shortening the duration of the disease, be the treatment what it may. Treatment may aggravate the case, and it may also make the patient much more comfortable than if the disease is left to pursue an unmodified course. The urine can be made less acrid by a variety of means; the distressing symptoms, such as chordee, etc., may be relieved; but as to cutting the disease short, I do not believe that it can be done.

You may infer that gonorrhœa is a subject of some importance, when I tell you that within the year 1877 a prominent English surgeon has issued a book confined to this subject alone, and containing about four hundred pages. It is the only book devoted solely to the consideration of gonorrhœa of which I have any knowledge. Its author is a gentleman who has been identified with the study and treatment of genito-urinary diseases in England for many years, and I can commend this book to you as the most valuable and comprehensive work on this subject in our language. But in it Mr. Milton has raised some issues which I thought were settled, especially that most important one with reference to the specific character of gonorrhœa. After considering the question, as it would seem quite thoroughly, the author arrives at a conclusion which, to me at least,

is extraordinary, which is that, so far as he is able to judge, *gonorrhœa is the result of gonorrhœa only.* Now, the French authorities, of which Ricord is the leading representative, almost without exception make the definite and unequivocal statement that true gonorrhœa may be acquired from a simple leucorrhœa. Ricord gives repeated instances of this kind, and also cites examples in which a gonorrhœa, not distinguishable from that acquired by contagion, has been produced solely by a persistent and continued ungratified venereal excitement.

In this country we have Dr. Bumstead (favorably known as an authority in this department) and also Drs. Van Buren and Keyes (who have written an excellent work upon genito-urinary diseases), expressing themselves with the greatest positiveness on this point, each giving cases when, to their certain knowledge, disease in no practical way differing from gonorrhœa, has been acquired by contact with discharges which were not gonorrhœal.

Dr. Fordyce Barker, of this city, quoted by Dr. Bumstead, speaks of a peculiar form of metritis which has associated with it a leucorrhœal discharge, that in repeated instances has produced a purulent urethritis in the male. Not long since a gentleman came into my office, with the statement that he had been married nearly one year; that shortly after marriage a purulent discharge came from his urethra. On consultation with his physician, he was told it was of slight importance, and had probably been acquired from a leucorrhœal trouble from which his wife was then suffering. From that time, within three or four days after each sexual congress with his wife, a purulent discharge appeared in his urethra, and continued until assisted by an astringent injection. When examined, the man was found to be free from any trouble whatever. Upon examining the wife it was ascertained that she was suffering from retroversion of the uterus; that the surface of the external os was eroded and covered with a thin layer of muco-purulent material. The uterus was restored to its normal position and retained by a pessary. I was of the opinion at the time that the erosion and discharge were due to displacement of the uterus, and so stated. Under suitable treatment the lady made

a prompt recovery, and from that time the gentleman suffered no more from his urethral trouble.

To me the case seemed to be one that pointed clearly to the leucorrhœal discharge, dependent upon the condition of the uterus, as the cause of the urethral discharge in the husband. This and the case which I related at the last lecture, in which the patient produced a urethritis by the violent introduction of a sound, I would put forward as among those where there is every reason to believe the urethritis to have been produced by other causes than contact with a gonorrhœal discharge.

Mr. Milton admits that "urethral discharges do appear in men as the result of connection with women laboring under leucorrhœa, *in whom there is no reason to suspect a present or a previous blenorrhagia.*" This admission, however, is wholly negatived by the sentence which follows it, thus: "It must, I think, be equally admitted that the facts supposed to establish this are, when we come to sift the matter closely, generally vague and few." The property of contagion with Mr. Milton points directly to a specific cause; to already existing gonorrhœa as the origin of it in all cases, and where there is absolutely no evidence of such origin, and no reason to suspect it, belief to the contrary, Mr. Milton says, "must remain a mere conviction, and can not be raised to the stability of truth."

Mr. M. states that in no case that he has read of "is there anything to show that the surgeon had satisfied himself as to the *previous state of the organs in both persons.*" On the strength of this he would seem to claim that all the evidence in favor of the non-specific character of gonorrhœa, the carefully-observed and reported cases of accepted authorities, are without value, notwithstanding the positive belief acquired through the long and studious experience of such men as Ricord, Diday, Bumstead, Van Buren, and, unequivocally stated, we must believe all urethral discharges associated with the contagious element to have a gonorrhœal origin, "even when there is no evidence of such origin, and no reason to suspect it." Personal statements, from no matter whom, circumstantial evidence, character of individuals, repeated coïncidences, all go for nothing.

Even the case previously cited, when the disease was believed *proven* to be of traumatic origin, and which was believed proven to be contagious (and hence gonorrhœal) by the supposed *proven* communication to a presumably healthy wife, even this case may be waived out of the contest as among the not *absolutely* proven cases.

We, however, must admit that all clinical observations and investigations are of necessity more or less empirical until carried to a point coïncident with or to the establishment of some fixed physiological or pathological law. Until such law is established, the most important, the most conscientious and extensive clinical labors must be open to the denial and depreciation of every passing observer of little or much experience. Thus it happens that the most important question upon the correct or faulty solution of which the honor and happiness of individuals—even of whole families—may depend, the accumulated experience and the deliberate conclusions of our wisest men are disregarded, and the specific nature of gonorrhœa asserted upon the basis of a purely negative personal experience. If anything could give an incentive and impetus to a movement towards a more scientific solution of the matter, we certainly have it here. Naturally we look to the great authorities in histological and pathological science for some clue which shall lead to a more definite understanding of the true nature of the contagious element of gonorrhœa, as well as that equally contagious property which is characteristic of conjunctivitis and infantile leucorrhœa.

It has occurred to me that the difficulty of settling the question with reference to the specific character of gonorrhœa may be simplified if we can go behind all clinical records and consider the changes which occur in the transition between the normal formation of epithelial elements and the characteristic pathological products. Rindfleisch (and his opinion is entitled to consideration), in speaking upon the question of the formation of epithelium, uses a significant phrase, namely, "epithelial infection," and says: "The opinion is inevitable that the embryonal formative cell can only become an epithelial cell when it comes in contact with such; *we must believe in a kind*

of epithelial infection." That is to say, when a formative embryonal cell comes up from the cellular tissue to take the place of a cell that has preceded it, its form and character is determined by coming in contact with epithelial cells already formed.

With reference to other tissues, it is claimed that the peculiar form which the germinal or formative cell is to take is determined by contact with the tissue of which it is destined to become a portion.

If this view is accepted (and I see no ground for objection, but, on the contrary, it is a beautiful explanation of the manner in which different tissues are formed), we have infection as a physiological process, and now the interesting question arises, at what point does the epithelial element cease to have that infective influence? In other words, at what point does it cease to have the contagious property? For it is here distinctly shown that the epithelial elements possess an essential and characteristic property of contagion. If this be the case, shall we accept the contagious element as evidence of gonorrhœa when we find it in the physiological process? It appears from that, as soon as the fact is recognized, that a contagious principle is contained in the physiological constitution of the parts. The doctrine of contagion receives a fatal blow. One thing is very certain, viz., that as long as this physiological infection, this influence of epithelial cells by their contact with each other, is continued in a salutary way, it gives rise to no disturbance whatever, and the thought of contagion does not arise. But when a cell which has fallen from its integrity exerts its vicious influence upon other cells, disturbance is manifest, and compels attention to its character and powers.

Because gonorrhœal disease is contagious, it has been claimed that this property must be regarded as evidence of the presence of a special virus. If, however, it is the contagious property alone that is characteristic, and this property is the proven attribute of all cells of gonorrhœal discharges, it can no longer be regarded as evidence of the specific character of gonorrhœa; hence the only distinction to be recognized between gonorrhœa and urethritis is a moral one. The term gonorrhœa implies gross immorality. A good man then with simple urethritis,

perhaps occurring independent of sexual contact, may, by injudicious living or venereal excess, elevate his simple urethritis up to a contagious point. Then he has *gonorrhœa.* He has done nothing morally wrong; he has simply been placed without the pale because of his urethral discharge assuming a contagious form. In that condition he has perhaps communicated the disease to his wife, who would, under Mr. Milton's teachings, be qualified to sue for a divorce, and to obtain it, notwithstanding there was no evidence of gonorrhœal origin, nor any reason to suspect it.

Differential Diagnoses. — Having endeavored to ascertain what gonorrhœa is, we will briefly allude to the question of differential diagnoses.

Inflammation of the mucous membrane covering the glans penis and reflected upon the prepuce or balanitis, may be mistaken for gonorrhœa. This condition may arise from various causes, such as irritation produced by accumulation of sebaceous material beneath the prepuce, or from hypertrophy of the papillæ of the mucous membrane covering of the glans, as in the case exhibited this afternoon.

In that case the irritation produced by the enlarged papillæ had given rise to pus, which had accumulated beneath a long prepuce in such quantity that when the prepuce was drawn back a discharge from the preputial opening took place that could very readily have been mistaken for one issuing from the urethra.

I have encountered cases in which such a mistake has been made, and injections containing various materials used for months in the supposition that the patient was suffering from gonorrhœa, when in truth the urethra was free from all disease except that produced by the injections. In some of these cases it is difficult, because of the degree of phimosis present, to ascertain whether the discharge issues from the urethra or not; but your treatment should not be commenced until that question has been settled.

The next point is to ascertain whether the disease you are called upon to treat is a simple urethritis or a gonorrhœa acquired by contagion.

In most cases the character of the exposure is not well understood either by the person exposed or by the physician. The presumption, when a discharge appears in the urethra of the male after illicit intercourse, is in favor of a gonorrhœa existing in the woman with whom such intercourse is held. At the same time it is not certain that a person having had sexual connection, and having had urethral trouble four or five days afterwards, that a gonorrhœa has been acquired. The natural conclusion is that a gonorrhœa has been contracted.

Now, in a very large number of instances it would be a mistake, and a very grave mistake, to consider such a discharge a gonorrhœa, because such a condition may arise from contact with simple leucorrhœa, and also from contact with the menstrual discharge. It is a necessity in these cases to wait, to treat the patient in a very simple way for a few days, until it is ascertained whether or not it is an active contagious disease. If it is not, simple means will be sufficient to effect a cure, and the disease will gradually fade away, leaving the parts in a healthy condition.

Quite commonly, not so much now as formerly, however, an attempt is made to cut the disease short by the use of some active injection. This plan is fast going into disrepute, and justly so, for by adopting it the advantage is at once lost of being able to determine whether the disease would not have readily passed away within a few days by the use of simple means. By such treatment you necessarily add an inflammatory trouble, and if the case is one of real gonorrhœa, you will increase the activity and the inflammatory character of the disease.

ART. II. — *Hysteria, Chlorosis, Daily Vomiting for Many Months — Rapid Cure with Brass Rings.* By WILLIAM A. HAMMOND, M. D., Professor of Diseases of the Mind and Nervous System in the University of the City of New York.

In June, 1850, a hysterical and chlorotic young girl, affected also with anæsthesia, amyosthenia, amenorrhœa, and dyspepsia, was two months in one of Dr. Rostan's wards, vomiting every day almost all the solids and fluids which she was

prevailed upon to swallow. Iron, it is remarkable, had been prescribed in vain, as well as many other substances, and only pills of oxide of zinc had appeared to do a little good.

Chance having led me to examine this patient, the eminent physician of the Hôtel Dieu kindly allowed me to try my treatment. I begun by ascertaining the suitable metal, and it proved to be brass, in plates. Afterward the Committee of the Academy, many distinguished physicians, Drs. Jobert (de Lamballe), Hourteloup, Pasquier, Beau, Tardieu, and Gosselin, whom I had assembled to witness the power of the metals on sensibility and motility, and Dr. Rostan himself, and his numerous clinical pupils, had satisfied themselves that this metal, applied experimentally, removed the anæsthesia and analgesia at the spot of its application and nowhere else.

"On the 6th of June, in the evening, I made a general application of brass. The next day general and special sensibility returned to three-quarters of the surface, and the muscular power had mounted to from ten to sixteen kilogrammes on the right side. The patient was greatly fatigued by the spoliation which the metal had effected, and even in the morning asked for food, and took it with pleasure, and digested it properly.

In the evening and on the following days a fresh application of the brass armature was made at night; and after the second day of the treatment, sensibility and motility having become almost natural, the patient, who has not vomited subsequently to the 6th, is no longer satisfied with the full diet (four portions), and does all sorts of little jobs for the sister of the ward, to gain additional allowance. Five or six days more pass, during which the color of the skin shows a tendency to become natural, and the bellows sound lessens more and more in the two carotids.

"On the 16th and 17th the catamenia, which had been absent several months, returned so abundantly, under the influence of the metal applied to the stomach and lower extremities, that the patient fancied she was flooding.

"On the 18th, sensibility natural; pressure forty kilogrammes. We suspend the use of the metal, and gradually, first the anæsthesia and amyosthenia, then the attacks of indigestion and

vomiting returned, and with the latter all the symptoms of chlorosis.

"June 26th. Analgesia of the upper extremities; diminution of taste and smell; pressure by the right hand twenty kilogrammes, instead of forty kilogrammes; weakness of the legs.

I resumed the metals permanently, and the return of sensibility and motility again preceded the reëstablishment of the digestive functions, and the return of the healthy composition of the blood.

"At the end of two months the patient, being perfectly cured, left the Hôtel Dieu, after having acted as a servant in the wards for six weeks."

So much for Dr. Burq's original investigations.

During last winter, M. Charcot, of Paris, whom you all know as an eminent neurologist, delivered a lecture on this subject at the great Saltpétrière Hospital, in which he announced himself as a believer in Dr. Burq's system, especially in the treatment of hystero-epilepsy. Two new features are declared by M. Charcot to have been discovered by himself: 1. Transfer phenomena are observed, and are said to consist in the transfer of anæsthesia, for instance, from one place on the arm to the exactly corresponding place on the other arm, and all through the influence of the piece of metal applied to the original insensitive surface. 2. The restoration of the faculty of discriminating between colors when this power is lost in hysterical patients. A girl, for instance, who could not tell one color from another, had the perception restored by a piece of gold ring held for a little while on the temple.*

But upon M. Charcot's observations I do not intend to dwell, for they are part of the current medical literature, and you can readily refer to them in the periodicals, should you desire to do so. I think I can show you in a few minutes just how much there is in Dr. Burq's metal therapeutics. You will probably discover that there is a good deal in it, but I scarcely think you will determine that it is exactly what he and M. Charcot de-

* Metalloscopy and Metallo-Therapy Applied to the Treatment of Grave Hysteria." December 30th, 1877. London "Lancet," January 19th, February 2d, and March 2, 1878.

clare it to be. I have here a small box containing several sharp needles, gold, steel, and platina, and a number of pieces of metals of various kinds, and of other substances not metallic. Among the metals are gold, silver, copper, steel, brass, zinc, bronze, lead, nickel, platina, tin, etc. Among the non-metallic substances are hard rubber, wood, ivory, tortoise shell, etc. They are all of the size and shape of a twenty-five-cent piece.

Now, I will call in from the waiting-room a female patient, an epileptic, and who is, moreover, strongly hysterical. I will give her to understand that I am about to apply a new system of medical practice, the accounts of which, from Paris, are very strong in its favor as a curative agent in diseases like hers. I will tell her that by the application, in a particular way, of a plate of gold to her arm, the nervous system will be so strongly impressed that she will experience very remarkable sensations in the part, and that in a short time thereafter the feeling of that and the neighboring regions will be entirely destroyed. But instead of using a gold disk, I will take one of these of tortoise shell or ivory, and you will probably find that all the phenomena I have mentioned will be produced. I may fail, for I have made no experiments on this girl, and it is not every case that is favorable. A fact which Dr. Burq did not fail to remark.

[The patient, a girl of fifteen, now entered the lecture-room, and Dr. Hammond, after describing the case to the class, addressed her as above, and then resumed.]

You see, gentlemen, that the sensibility is intact, for when I prick the skin of any part of the left arm, she winces, and the blood flows readily. I now press this little disk (tortoise shell) on the surface of the back of the wrist, and hold it there firmly a few moments. The patient says it begins to feel warm, and that a sensation of heat extends up the arm. In a minute or two longer I think the sensibility will be entirely destroyed, and then I shall stick this steel needle into the arm, and I venture to say she will not feel it.

[The lecturer waits about two minutes, during which time the patient repeatedly calls attention to the fact that she feels queer sensations in the arm. Suddenly she says the feeling is

all gone; Dr. Hammond removes the disk or tortoise shell, and thrusts the needle into the arm beneath, to the extent of half an inch. The patient gives no evidence of sensibility; does not appear to know that the skin is pierced. Other punctures are made in various parts of the arm, above and below, and all are anæsthetic.]

You see, gentlemen, that the experiment has entirely succeeded. It would be perfectly easy to get like results from any part of her body. I will now ask her to leave the room while I explain the matter more fully to you.

You have seen what effects were apparently produced by the little tortoise-shell disk, which she took to be gold. I will now show you that when properly managed, exactly opposite effects can be got from the tortoise shell. You can in fact make it blow hot and cold with the same breath. I am going now to use the tortoise-shell disk on the opposite arm, telling her that it is platina, a metal of which she does not know much if anything, and that the effect will be to cause pain in the arm, and to make it more than naturally sensitive.

[The patient is again called in, and is told that a platina disk will be applied to the right arm, and that the effect will be to cause intense pain, and to render the arm very sensitive to the prick of the needle. The tortoise-shell disk is placed on the back of the right wrist, and it hardly touches the skin before she begins to complain of shooting pains up the arm, reaching even to the neck. These, as she declares, increase in intensity till the disk, at the end of four minutes, is removed in order to obviate her sufferings. The skin is now barely pricked with the needle, and she screams with pain. Another patient, a woman suffering from apparent cerebellar disease, is introduced, and like experiments are successfully performed upon her. Dr. Hammond then continues.]

During the last two weeks I have cured several paroxysms of migraine by applying some one of the disks (it does not matter which) to the forehead, and have restored sensibility to a hemi-anæsthetic and hysterical lady by fastening disks of hard rubber to the arm and leg with bands of adhesive plaster, so that she could not see what was underneath. I have not tried

to transfer anæsthesia from one side of the body to the other, or to restore the perception of color, but I will show you both these phenomena soon, and probably several others not discovered by MM. Burq and Charcot.

I will show you one of these, and you can practice it on yourselves. Doubtless in some cases it has something to do with the result.

I take this disk (it happens to be copper, but any other will serve the purpose) and press it on the back of the wrist for a few minutes while I go on talking. You will see when I take it off and stick a needle into the skin that the blood does not flow, and I will be able to tell you, with entire truth, that I do not feel any pain or even a sensation from the wound. I confess that when I first did this I was for a moment a little surprised, but I very soon perceived that the anæsthesia was due to the pressure of the substance on the skin, and resulted, no matter of what material the disk was composed, so long as the pressure was sufficiently firm. I now take off the disk and stick this needle through a fold of the skin, and I assure you that if I did not see it, I should not know it was there from any sensation it causes. I pass around among you several disks and needles, and you may try this interesting but very simple experiment for yourselves.

But to return to our subject as understood by MM. Burq and Charcot. The former thought the results were due to some hitherto unknown quality of the metals; the latter, without being very positive, seems inclined to adopt this view. The principle of suggestive or expectant attention, which I have so often brought to your attention, was not recognized when Dr. Burq first wrote about metal therapeutics; but M. Charcot strongly repudiates the idea that any such factor has aught to do with the results. In this I am quite sure (as doubtless you are also, from what you have just seen) that he is altogether wrong, and that to this principle and to nothing else the results of metal therapeutics are to be ascribed. They are to be placed in the same category with those obtained from the metallic tractors of our countryman Perkins, and which Dr. Haygarth showed followed equally well on the use of wooden tractors

all gone; Dr. Hammond removes the disk or tortoise shell, and thrusts the needle into the arm beneath, to the extent of half an inch. The patient gives no evidence of sensibility; does not appear to know that the skin is pierced. Other punctures are made in various parts of the arm, above and below, and all are anæsthetic.]

You see, gentlemen, that the experiment has entirely succeeded. It would be perfectly easy to get like results from any part of her body. I will now ask her to leave the room while I explain the matter more fully to you.

You have seen what effects were apparently produced by the little tortoise-shell disk, which she took to be gold. I will now show you that when properly managed, exactly opposite effects can be got from the tortoise shell. You can in fact make it blow hot and cold with the same breath. I am going now to use the tortoise-shell disk on the opposite arm, telling her that it is platina, a metal of which she does not know much if anything, and that the effect will be to cause pain in the arm, and to make it more than naturally sensitive.

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painted to look like the metal ones. It is all nothing but suggestive and expectant attention. You tell the patient what she is to expect, and if she has confidence the prediction will be realized, whether it be an increase of strength, a restoration of the perception of color, or the production of anæsthesia or hyperæsthesia. Why, there are dozens of cases on record of hysterically paralyzed men and women starting from their beds, or throwing away their crutches, under the influence of the fear of fire, or through the suggestive and expectant attention excited by the Zouave Jacob or our own Newton. We can not deny these facts any more than we can deny the facts of MM. Burq and Charcot; but instead of viewing them "unequally," as Czermak puts it, we go a little further than they, and show that it is not from any metallic influence that the phenomena result, but through the operation of a still more remarkable though well recognized principle. We have all seen this power exerted in various ways; we have seen the "biologist" keep the extended arm of his subject in the position in which he has placed it, cause him to taste all kinds of flavors and to experience a dozen different sensations. We have seen rheumatism cured by a piece of sulphur or a horse-chestnut kept in the pocket, and even warts charmed away by incantations of various kinds. The history of medicine abounds with relations of famous systems of cures and wonderful remedies, whose whole power depends upon suggestive and expectant attention. How far the conscientious physician may legitimately use this power, I am not prepared to say. The patient is very apt to think with the Spaniard, "*Hagare el milagro si kagalo Mahoma,*" let the miracle be done, though Mahomet do it. It is nothing to him whether he be cured by the direct agency of metals applied to his skin or by expectant attention, so long as he is cured; but let us, at all events, understand the matter correctly ourselves.—*Phil. Med. and Surg. Rep.*

Treatment of Hiccough by Pilocarpine.—Ortille ("Bull. de Thérap.") stopped at once an obstinate hiccough by two and a half centigrammes of the muriate of pilocarpine.—*The Doctor.*

ABSTRACT DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."

CONDUCTED BY EDWARD MILLER, M. D., LOUISVILLE, KY.

On Obscure Abscesses of the Liver; their Association with Hypochondria, and their Treatment. By Wm. A. Hammond, M. D.—Dr. Hammond states that abscesses of the liver may exist without giving rise to any marked local or general symptoms. He quotes various authorities in support of this assertion, as Twining, Budd, Geddes, Copland, Watson, Aitken, Flint, Simon, Stokes, and Frerichs, who all have specially studied the diseases of the liver, and concur in the statement that the diagnosis is often obscure. Local examination furnishes no data for proving the existence of an abscess, neither the size nor the form of the gland is altered, and there is no increase of tenderness. The autopsy alone reveals their existence. The association of liver disease or disorder with depression of spirits or hypochondria is certainly no new thing with English-speaking people. Until recently the only connection known to exist between the brain and the liver was through the pneumogastric nerve or the sympathetic and spinal cord. The researches of Cyor and Arladoff have, however, shown, as cited by Fothergill, "that the vaso-motor nerves of the liver actually run down the vertebral arteries through the lower cervical ganglia, after which they form the annulus of Dieussen's, and then pass on to the first dorsal ganglion, and thence through the gangliated cord of the sympathetic, the splanchnics to the cardiac ganglion, and along the hepatic vessels to the liver. The portion of the brain which is supplied by the vertebral arteries, and consequently affected by vaso-motor disturbances of the nerve supply of these vessels, is, according to Shroeder, Vander, Kolk, and Laycock, the portion in which is located the emotions. Emotional disturbances or melancholia coëxist with other abdominal affections as well as disease of the liver; as, for instance, with fæcal accumulations in the colon, with Addison's disease, with uterine displacements, and with peripheral irritation of the reproductive system." But though liver disease, abscess included, will pro-

duce hypochondria, there are other points of great interest connected with the subject. What, for instance, is the cause of the abscess of the liver in these cases? Perhaps embolism, perhaps a slight pyæmia; certainly not dysentery or other endemic causes. Dr. Hammond is inclined to think they are due to brain disturbance in the first instance, and that by their influence the cerebral symptoms are altered and intensified. And this is no mere hypothesis. The special point is certainly new, but there are many instances of analogous effects as regards other organs of the body, when the nervous connections between them and the brain have been interfered with.

There are, therefore, strong physiological and pathological reasons for ascribing these hepatic abscesses to the direct influence of brain diseases, especially hyperæmia, by which the nutrition of the liver is impaired and destruction of a certain portion of its tissues effected. Dr. Hammond thinks that the points established by his cases are: That hepatic abscesses are probably much more common with us than is generally supposed; that they may exist without any local symptoms or such general disturbance as is commonly regarded as indicating their presence; that they may be associated with hypochondria and other evidences of cerebral disturbance; that they should be opened at the earliest possible moment and without waiting for adhesions to form between the liver and the abdominal walls; that the proper place for performing the operation of aspiration is in one of the intercostal spaces; that the operation by aspiration is free from danger; that in all cases of hypochondria or melancholia, the region of the liver should be carefully explored, and that even if no fluctuation be detected, or any other sign of abscess be discovered, aspiration, being a harmless operation, should be performed; that if pus be evacuated, the operation may be expected to be followed by a cure of the mental disorder, as well as by the preservation of the life of the patient from the probably fatal consequences of hepatic abscess; that if no abscess be found, the patient will at least be no worse off than he was before.—*St. Louis Clinical Record.*

Antiseptic Osteotomy for Ankylosis and Deformity. By Richard Barwell, F. R. C. S.—In cases of ankylosis of the

knee-joint, whether it is true and bony or false and fibrous, osteotomy will be found an efficient substitute for the more serious operation of excising a wedge of bone. There are cases of false ankylosis of the knee in which stretching the fibrous band with a certain degree of force is the best possible treatment. But there are other cases in which the surgeon finds one of two impediments; one where the posterior crucial ligament is extremely shortened, which causes, if the surgeon wrongly perseveres in extension, luxation of the tibia; the other where the joint having become thoroughly disorganized, fibrous or fibro-cartilaginous bands unite the bones. If these bands be long, the knee may be put straight by manual power; but if short, the necessary force will so rend the union that a knee movable in all directions—a flail-joint, as it is called—will result; a condition worse than useless. Therefore, when the surgeon finds that one or the other of these misfortunes is likely to occur, it is wise to abstain from further effort, and to divide the femur as close as he can to its lower end. The result will be a rapid and safe convalescence and a limb sufficiently straight. There is another kind of deformity produced by rickets, certain curves of the bones which, if they persist, are extremely ugly and detrimental. A certain number of young people recover even from severe distortion of bones, if they are placed in the best circumstances for such cure; but a large number must remain permanently distorted, unless operative surgery intervenes. It will be seen at once that if a bone abnormally bent be divided and then placed in a straight position, there must result at the place of division an angular interval between the ends of the bone, the two cut surfaces will only touch each other at one side or corner, and it must of course happen that the gap will be on the concave side of the faulty curve. In order to have this gap most readily filled up, Mr. Barwell endeavors to leave the periosteum over the interval entire, or nearly so. The best instrument for dividing the bone is the chisel. It does not produce the detritus of the saw, and there is less injury to the soft parts. Through the same wound in the periosteum the bone is cut in all directions nearly to the surface, and the rest fractured by a sudden, very short jerk, so as to move the bone

from its natural position as little as possible. Then the rectification must be done slowly and with slight extension, not to prevent riding, but simply to obviate tearing the periosteum. This is all done antiseptically, and the limb then done up in plaster-of-Paris. The patients generally recover without fever or pain or suppuration, and the results, as illustrated in the cases described by Mr. Barwell, are all that could be desired.—*Brit. Med. Jour.*

Excision of the Tongue by Immediate Ligation. By William Fearnley, L. R. C. S., Edin., Lerwich, Shetland.—The patient, a woman aged sixty-six, had an epithelioma on the tongue opposite the only tooth in her head, a molar with a sharp edge, in the lower jaw. The "sore" involved the anterior third of the posterior half of the right side of the tongue, which was much indurated. The glands being unaffected, extirpation was recommended, to which the patient readily assented. Chloroform having been administered, the tongue was transfixed with a needle carrying a stout thread, which was looped and given to an assistant, in order to pull the tongue well out of the mouth. The tongue was then transfixed by a blanket-pin, beginning at the right angle of the mouth and issuing at the left, thus carried immediately in front of the epiglottis. A single loop of very stout whip-cord was then placed around the tongue behind the pin, having one turn of a knot, ready to be tightened. Next, the attachments of the tongue to the floor of the mouth were divided with a pair of scissors, whilst it was dragged out by the looped thread, care being taken that the face was held sideways and close to the pillow. Then it was quickly severed with the whip-cord, which cut it much as it would cut hardened butter in frosty weather. There was smart hæmorrhage from the use of the scissors, about three ounces of blood being lost, but not a drop from the surface traversed by the whip-cord, and no ligature and no mopping of the parts with styptic was required. The patient remained in bed three days, and went home, on foot, the eighth day, a distance of eleven miles. After a thirteen years' experience with torsion, I am in a position to state that no more blood is lost by the speedy severance of

actively vascular parts by rapid strangulation than by measured torsion.—*Brit. Med. Jour.*

Strapping the Chest in the Treatment of Chronic Pulmonary Consumption. By JOHN K. SPEDDER, M. D., London.—Dr. Spedder has lately treated a case of consumption, with cavities in the top of each lung, a female aged thirty-three, in which, although the case was clearly hopeless, there was, for a while, marked improvement from the internal use of hypophosphites and the external application of strips of adhesive-plaster, extending three inches below the clavicle in front, to half way down the chest behind. The patient spoke gratefully of the comfort and support which this simple plan afforded her, and the cough was strikingly lessened. The cold weather of March caused an exacerbation of the disease, and death ensued after a short period.

Dr. J. F. Roberts some years ago, in the "Practitioner," and again in his book on Practice, recommended strapping the chest in various pulmonary diseases. The objects aimed at by this procedure are, the keeping of diseased structures in as quiescent a state as possible, and by a limitation of chest movements to check an overactive circulation. One result, not noticed by Dr. Roberts, may be this: By supporting weak ribs and weak intercostal muscles, the chest walls are kept more together and less work is required of the ordinary muscles of respiration, and everything which economizes muscular force must help to maintain the patient's strength. The plaster, in strips an inch wide, is applied vertically, horizontally, and obliquely, and where depressions above or below the clavicle occur, little pads of cotton-wool are placed. For obvious reasons, transverse strips are not easily used in the female, and Dr. Spedder's patient was quite contented with the vertical strips.—*Brit. Med. Jour.*

Diphtheria. By ROBT. BELL, M. D., Glasgow.—Dr. Bell gives an account of twenty well-marked cases of diphtheria, all of which recovered. In every house where the disease prevailed, the arrangements for supplying the inmates with water were defective. In many instances the drinking-water was

drawn from a cistern placed above the water-closet and bath-room; and when the cisterns were examined, they were found to contain an accumulation of slimy matter of a green color, which, under the microscope, proved to be loaded with minute organisms of the form of blood corpuscles, and the 1-4000th of an inch in diameter. There can hardly be an estimate formed of the immense amount of preventable zymotic disease which is constantly attacking the community under similar unsanitary conditions.

The treatment was the same in every case. The throat of each patient was freely painted every two hours with the following application: Glycerine of carbolic acid, the strong liquor of the perchloride of iron, and sulphurous acid, of each three drachms; and the following mixture given internally: Chlorate of potash, two drachms; sulphurous acid, two and a half drachms; glycerine, one ounce, and water to four ounces; two teaspoonsful to be taken every two hours. In this way an antiseptic was brought in contact with the diseased surface every hour. The diphtheritic membrane soon ceased to spread, and in a few days disappeared entirely. The resulting prostration and debility was removed by a course of tonic treatment.—*Brit. Med. Jour.*

Stone in the Bladder of a Man with Albuminuria, Chronic Bronchitis, Stricture of the Urethra, and Vesical Atony—*Lithotrity combined with Median Lithotomy at one Sitting—Good Result.* Under the care of Mr. TEEVAN.—The patient, a man sixty-six years old, afflicted with gout and rheumatism, suffering from chronic bronchitis, and a stricture of twenty years' standing, the result of gleet, together with atony of the bladder and albuminous urine, was first treated by Dr. Thorowgood until he was able to undergo the proposed operation. Mr. Teevan then dilated the stricture by tying in a No. 10 catheter for six and four hours on two successive days. A week afterward, the patient being sufficiently recovered, Mr. Teevan introduced a lithotrite and broke up the stone, an oxalate of lime calculus. An incision was then made into the perineal urethra in the median line and the stricture divided. The open-

ing being dilated with the finger, a slender pair of forceps removed the fragments of stone, one by one, and the bladder being washed out, a piece of lint dipped in carbolic acid was inserted in the wound. In about two months the patient had nearly recovered, the urine being still albuminous. Mr. Teevan remarked that the case was full of interest and probably unique. Lithotrity at one sitting had been performed by Bigelow, perineal lithotrity by Dolbeau, Gouley, and Henry Lee, and lithotomy after lithotrity, as a matter of necessity, by others, but the special combination of designedly reducing the entire stone to small fragments "*per penem*," and then immediately extracting them through a median perineal incision, was quite novel. It was the only operation suitable under the circumstances. Median lithotomy is only applicable to small stones, and lithotrity alone was out of the question. Lateral lithotomy is ten times more fatal than external urethrotomy. One great advantage of the median incision was that it not only offered free vent for the extraction of the fragments and the escape of any débris that might be left, but that it permitted the stricture, which had caused the atony of the bladder, to be divided, thus relieving the patient of his stone and of his stricture at one operation.—*Lancet.*

Treatment of Colle's Fracture without Splints.—Dr. L. Pilcher, of Brooklyn, at the May meeting of the New York Academy of Medicine, read a paper on "Fracture of the Distal Extremity of the Radius." He showed by means of diagrams the mode of its occurrence, and demonstrated his views by breaking the radius of a cadaver and dissecting it before the Academy. He showed that transverse fracture of the radius within an inch of the distal end was due to a force of avulsion communicated through the anterior ligament of the wrist-joint, and to extreme bending backward of the hand, and that the displacement resulted from the forcing of the upper fragment obliquely upon the lower. An important feature was the rôle played by the untorn periosteum on the dorsum, the periosteum anteriorly being torn. This, Dr. Pilcher considered, prevented the return of the displaced fragments and their proper coäpta-

tion. The method of treatment, indicated by such a condition, was to bend the hand and wrist backward sufficiently to free the fragments and relax the tense periosteum, then to make slight extension with pressure on the dorsum, concluding with placing the forearm in the normal position. A strip of adhesive plaster two inches wide is then wound around the wrist as a support. The after-treatment was massage and motion of the hand after the third day. The use of splints was deprecated, as they met no indication, and in many cases proved injurious. Dr. Pilcher said he had treated forty-nine cases of Colle's fracture, and seen many others, and was satisfied of the correctness of his views. Most of the members were of the opinion that Dr. Pilcher's views were original, and based on sound pathology. *N. Y. Med. Jour.*

The Causes and Cure of Insomnia. By JAMES SAWYER, M. D., London.—Inability to sleep at all, or inability to sleep long enough without the aid of drugs, is one of the commonest complications and consequences of a vast variety of morbid states. Pyrexia, physical pain, frequent coughing, and urgent dyspnœa are conditions which prevent or shorten sleep. In such instances the cause of the insomnia being obvious, the remedy is plain; either the exhibition of hypnotics or to reduce the fever, to palliate the pain, to check the cough, or to relieve the cardiac disturbance. But there is an insomnia *per se* or simple inability to sleep; a kind of wakefulness which seems to depend upon an inability of the brain and nervous system generally to adapt themselves to the necessary conditions for sleep. This condition is met with mostly in private practice, and in individuals of the upper class and of high mental endowment. The malady is of extreme importance, and happily, if its causes be rightly understood and judiciously controlled, easily cured. Dr. Sawyer divides the varieties of insomnia into groups, in which the cause of the affection is the "principle of division." These groups are the "psychic," "the senile," and "the toxic." The subjects of the psychic form of insomnia are mostly men, and men of the nervous temperament. A severe and sudden emotional shock of a depressing kind or prolonged mental strain

in all its varied phases is a common cause of sleeplessness, and may produce a well-marked group of symptoms, which are given by certain writers as the signs of cerebral hyperæmia. As people increase in age, they exaggerate the merits of early rising. The sleeplessness from which many old persons suffer is mainly the result of senile degeneration of the smaller cerebral arteries. Those vessels, less elastic and less contractile than in health, are physically unable, with their weakened walls, to adapt themselves to the requisite conditions for healthy sleep; hence senile insomnia. In toxic insomnia, a poisonous agent, either introduced from without or the product of diseased processes from within the body, maintains cerebral vascularity at such a height that conscious cerebral activity—that is wakefulness—is an inevitable consequence. The most frequent external poisons are tobacco, alcohol, tea, and coffee; the internal, certain effete products of tissue metamorphosis which accumulate in gouty persons or those whose kidneys act deficiently.

For the treatment of insomnia, soporifics must often be used, such as chloral, opium, morphia, the bromides, and affusion with cold water. In the severe forms of psychic insomnia, sleep must be at once secured by some efficient hypnotic, preferably by chloral. In the more chronic form, depending upon prolonged worry or overwork, the bromides should be employed in full doses, thirty to sixty grains at bed-time. Rest, regular hours, appropriate exercise, tonics and change of scene, all help to restore the patient. In the toxic kinds, the tobacco, the alcohol, the tea, etc., as the case may be, is taken away or diminished. The treatment of the insomnia of gout or chronic renal disease involves the therapeutics of the maladies upon which the wakefulness depends. Colchicum, with some of the saline purgatives, may be given with confidence of benefit. Senile insomnia is very obstinate. The bromides with hop or henbane are the best means for its relief.—*Lancet.*

Pernicious Anæmia.—At the May meeting of the Bradford Medico-Chirurgical Society, the President, Mr. R. H. Meade, read a paper on "Pernicious Anæmia," in which he stated that

the subjects of it were chiefly of the middle age, and seemed to sink and die without discoverable cause, as if from lack of red blood. Addison had pointed out the distinction between this anæmia and the curable forms of amenorrhœa and chlorosis, in which the powers of assimilation and nutrition were defective; here the affection was intractable and fatal. The microscope failed to enlighten us as to a cause. Mr. Meade described a case, in which the patient, at first stout, strong and florid, but of gouty diathesis, was attacked with sciatica. After partial recovery from this, he began to fail generally, became as if bloodless, with pallid mucous surfaces, and, though with a good appetite, his food failed to nourish him. Careful examination disclosed no lesion of the viscera or taint of cancer. No treatment was of any avail. A careful consideration of this disease pointed to some obscure form of cancer affecting the digestive and assimilative organs. Atrophy of the glandular structure of the stomach, disease of the glands, obstructing the lacteals and scirrhus of the pancreas, had been observed in different cases. Although no malignant disease existed in Mr. Meade's case, their intractability was thought by others suggestive of their malignant character.—*Lancet.*

Incubative Period of Scarlet Fever.—At the May meeting of the Clinical Society of London, Dr. Murchison read a paper on this subject, based upon observations made in seventy-five cases, and extending over a period of twenty years. Observations upon the incubative periods of small-pox, of varicella, of measles, whooping cough, typhus fever, and enteric fever were given, and with the result that in neither of these diseases was the period of incubation fixed. The eruptive fevers might be divided into two classes; one class with a long period of incubation, as variola, varicella, measles, typhus, enteric, relapsing fever and mumps, and another class with a short incubative period in which were comprised erysipelas, diphtheria, dengue, and scarlet fever. As regards scarlet fever, its period of incubation was given as varying from two days to a month. Dr. Murchison had formerly analyzed twenty-three cases, in none of which did it exceed one week. In some of the cases

now reported the incubative period was very short. In one it did not exceed eighteen hours; in two others it was less than twenty-four hours. In a well-known case some years ago, where the guests at a dinner table were attacked, in none was the period longer than six days; in forty-four it did not exceed four days; in sixteen it did not exceed two days; and in fifteen it was not twenty-four hours long. The experience of other physicians with very short incubative periods was given; the result being the rule that if, after exposure to scarlatinal infection, a person was subjected to a week's quarantine, and showed no symptoms of having been infected, he was safe. Dr. Murchison had never known this rule to fail.—*British Medical Journal.*

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*Class-Room Lessons on Syphilis.* By FESSENDEN OTIS, M. D., Clinical Professor of Genito-Urinary Diseases at the College of Physicians and Surgeons, New York City.

Treatment of Chancre, the Initial Lesion of Syphilis.—Gentlemen: I will first speak of *treatment by excision.* Whenever a well-determined initial lesion is situated in loose tissue (integument or folds of prepuce in males, or of the vulva in females), the earlier removal, by excision, is accomplished the better. Not with the expectation of preventing constitutional infection (which, as a rule, is inevitable before the local lesion is discovered), but, as far as possible, to remove a focus of dissemination for diseased elements, and to diminish the danger of conveying disease to others.

The infective neoplasm, whether under sound skin or appearing in any one of the forms or modifications previously described (except the inflamed or suppurating), should be removed entire. The resulting wound heals, as a rule, by first intention. Even when the induration is large, little, if any, deformity remains after cicatrization. Practically, the indurated tissue is a foreign body, and its thorough removal requires the sacrifice of but little of the surrounding healthy structure. Favorably situated, open

initial lesions of long standing may be promptly cured in this way.

For the performance of this operation, first cleanse the parts thoroughly by gentle bathing in warm water; in all open lesions apply a solution of carbolic acid of a strength of one part of the acid to forty parts of water, after which raise the mass of induration between the forefinger and thumb, and encircle it firmly at the base with a bit of fine silver or malleable iron wire. The indurated part may be separated from the normal tissue in the same way by compression between the arms of a bent probe, being careful to include the entire induration.

Now, with a narrow, sharp-pointed bistoury, pierce the tissues at the centre, beneath the compressing wire or probe, and cut well under and out, including all the indurated and a little of the sound tissue of that side. This effected from the place of beginning, cut out in the same way on the opposite side. Be assured by careful examination that every portion of the neoplasm is removed, then introduce interrupted sutures of silk or silver wire at intervals of one-fourth of an inch. The patient should be kept in the recumbent position, the parts constantly wet with carbolated water until the third day, when, on removal of the sutures, union by first intention will, as a rule, be found to have taken place. The resulting cicatrix may indurate, to a greater or less degree, but rarely if ever to the extent of inducing a solution of continuity.

In no case does this procedure lessen the necessity for constitutional treatment. The indurated papule, when so located that excision is unadvisable (as on the glans penis, or involving the tissues of the corpora), may be subjected to applications of the oleate of mercury (six per cent. solution) or any correspondingly mild mercurial ointment. When the mucous membrane or cuticle covering the induration is abraded, or at any stage of simple necrobiosis, dusting the surface with dry calomel, and protecting it with a thin layer of dry lint, are often serviceable. Calomel in combination with lime-water, in the proportion of a drachm to a pint (*lotio nigra*), or bichloride of mercury half a drachm to the pint of lime-water (*lotio flava*), are also much esteemed as applications to the open initial lesion. The tissue metamorphosis and absorption, which are requisite for the removal of the syphilitic neoplasm, are most readily induced by the internal administration of some one of the various mercurial preparations. In all forms of the initial lesion, the chief obstacle to resolution or heal-

ing is the mechanical interference to nutrition, occasioned by accumulated cell growth. Its removal must occur through the process known as fatty degeneration. The most active and reliable agent in effecting this, and in promoting the necessary subsequent absorption and elimination, is mercury; hence the internal administration of some mercurial preparation is essential in all well-determined initial lesions. The protoiodide of mercury, in pill one half grain to one grain, three times a day. The biniodide in one-twentieth to one-twelfth grain. The bichloride in doses of from one one-twentieth to one-twelfth grain. The mass, hydrargyrum, from two to four grains three times a day, until the constitutional influence of the drug is manifested by a spongy and sensitive condition of the gums, or a slight mercurial odor in the breath. The mercurial impression should be maintained as nearly as possible at this point until complete absorption of the local neoplasm has been effected. Its further employment will be considered in the lessons on treatment of general or constitutional syphilis.

Cleanliness, freedom from friction, and irritation from all other causes, simple diet and abstinence from alcoholic stimuli are necessary to the most favorable results in treatment of the initial lesion, as well as all other forms of syphilis.

In regard to the modifications of the initial lesion of syphilis, the mucoid form requires, in addition to the constitutional treatment previously described, the application of the solid argentum nitratis (or some other caustic), sufficient only to destroy and subsequently to repress the exuberant granulations.

The Inflamed or Suppurating Initial Lesion requires rest and opiate or sedative dressing, as the lotio plumbi et opii, in the proportion of grains v each to the ounce of water, or the powdered iodoform simple, or with an equal part of tannic acid, which seems to deodorize, and possibly increases the efficiency of the iodoform.

In the Gangrenous Form the powdered iodoform is efficient as an antiseptic. Poultices of powdered charcoal are also of value, but the internal administration of mercury must not be neglected while the gangrenous action is limited to the induration. Occurring in debilitated or highly scrofulous subjects, as is usually the case, attention should be given to general support by generous diet, quinine, and iron. The potassio-tartrate of iron in fifteen to twenty-grain doses (as recommended by Ricord) seems to exert a specific influence over gangrenous conditions. It must not be

forgotten that healing and apparent cure of the initial lesion does not mean cure of syphilis. After disappearance more or less complete, the induration may return. Not unfrequently it may be observed to increase or diminish in apparent sympathy with the progress or abatement of the constitutional disease. From this fact the local induration has come to be considered by some as a reliable barometer, by which the effect of general treatment may be appreciated. The duration of the initial lesion varies greatly in different cases, sometimes disappearing within a few weeks, and with it every trace of induration; at others it continues as an induration, more or less distinctly marked, throughout the active stage of the constitutional infection. Enlargement and induration of the lymphatic glands nearest in connection with the initial lesion constitute the first positive evidence of the progress of constitutional infection.

Concealed initial lesions (as within the meatus urinarius or the anus) may be treated with bougies or suppositories, medicated with opium, salicylic acid, or iodoform.

Syphilis—Treatment for One Year—Ought Treatment to be Continued?—Case.—This case, gentlemen, contains some points of interest, and gives us the following history: About one year ago the patient came to us with the characteristic roseola of syphilis. The antecedent history was quite uncertain, and we were obliged to wait before we were thoroughly satisfied regarding the nature of his trouble, until some of the later symptoms of syphilis supervened. He has been under treatment one year. He had no papular eruption, but had well-marked mucous patches in the mouth, and a persistent induration and ulceration at the seat of the original lesion. The persistence of these latter symptoms was so great that we were at times uncertain whether there might not be some other element than the syphilitic in active operation. But this induration has finally passed away, and he has come to us to-day to know whether treatment should be continued longer; to learn what the prospect is with reference to recovery from syphilis. He is now apparently free from the disease, but we are expected to give an opinion with reference to the future, and to determine whether there is any necessity for further medication.

In the absence of all general evidence, we wish to look particularly at the condition of the glandular system. If we find no open lesions, no positive glandular enlargement after the lapse of this period of time, we are warranted in suspending treatment,

with the hope that no further manifestations of the disease will be made. As long as there remain secondary glandular enlargements at a distance from the seat of the initial lesion, we must believe that syphilitic trouble is present, and continue the treatment. In the earlier part of this case there was positive glandular enlargement in the cervical region and in the arms. There is no evidence whatever of the persistence of glandular enlargement in these regions, except in the cervical, where there is a slight increase in the size of the glands, but it is quite different from the characteristic enlargement present some time since. In the groin no enlargement of glands can be found upon the right side; there is slight increase in the size of the glands upon the left side, but it is not at all characteristic. The case, therefore, must be regarded as one in which very satisfactory results have been obtained after treatment prolonged for only one year. One year is an exceptionally short time to obtain so satisfactory results in as well-marked a case as this.

There is, therefore, in this case nothing left except slight glandular enlargements, which are not characteristic, but at the same time are sufficient to warrant an effort at further reduction by continued treatment. This man probably will have no further trouble connected with the active stage of the disease. It is advisable, however, that he should continue the treatment which he has been under, and take two grains of bluemass two or three times a day, and continue its use for two or three months, when another examination should be made with reference to the condition of the glandular system. He wishes to pass from under our observation for three months (as he is to leave the city), and I should not hesitate to direct him to pursue this course of treatment during that time, for there is a security obtained which is worth all the damage done by the mercurial.

I question whether such an amount of mercury will do him the least harm, even if there was no necessity for its use; but in his case there is a manifest propriety in its continued administration. I well recollect a case in which the bichloride of mercury, in one-twenty-fourth grain doses, was used for some time, and then it was advised to discontinue its use. Through some misunderstanding, however, the mercurial was continued, and continued for eighteen months before it was accidentally discovered that the patient had been taking it regularly all the time, and had not been conscious of any unpleasant effects arising from its use.—*New York Medical Record.*

ART. II.—*Fracture and Separation of Lambdoidal Suture of Skull—Laceration of Brain, with Extensive Hæmorrhage in Right Frontal Lobe—Absence of Severe Brain Symptoms—Supposed Intoxication—Death.* Under the care of Mr. GEORGE LAWSON.

The following case presents two points of interest. First, it illustrates the difficulty that may arise in deciding whether a patient is drunk or dying. On the one hand, intra-hæmorrhage often produces symptoms simulating drunkenness; and on the other, a druken man may receive an injury to the head; or be seized with apoplexy; hence it sometimes becomes a nice point in diagnosis to determine in what degree the symptoms are due to brain mischief, and in what to drink. The patient in this case was taken to the police cell as drunk. He was medically examined, and recovered sufficiently from his apparent drunken semi-consciousness to be able to converse with those about him. After a few hours, however, severe cerebral symptoms came on, and he was transferred to the Middlesex Hospital, where he died on the thirteenth day from severe laceration of the brain substance, associated with extensive hæmorrhage, and with fracture into the lambdoidal suture. The second point of interest is the remarkable absence of paralytic symptoms, considering the severe laceration of the brain. With the exception of loss of power over the sphincters there was no paralysis whatever. There was considerable rigidity of the extremities, which were maintained in a flexed position.

We are indebted to Mr. Lyell, the surgical registrar of the hospital for the following notes:

Thomas E., a young man twenty-five to thirty years of age, was admitted into the Broderip ward on March 13, 1878, completely insensible, and with the following history. On the previous day (the 12th), at about 1:30 P. M., the patient was said to have fallen from a dung-cart. He was taken to the police station as drunk, and there the divisional surgeon examined him, and could not find any injury. The patient was able to walk to the station with assistance, and he recovered in a short time from his semi-consciousness sufficiently to be able to talk to those about him. At 6 P. M. he was found in his cell insensible, and was then taken to the hospital.

On admission he was wholly unconscious, with quiet, regular, non-stertorous respiration. The eyes slightly diverged, and the

pupils were small, equal, and not affected by light. The patient opened his eyes and stared if shouted at, but immediately relapsed again. At intervals his legs and arms were seized with a kind of convulsive twitching. At other times he performed voluntary movements, such as scratching himself. His attitude was a flexed one, and the muscles generally were rigid when attempts were made to extend him. The surface of the body was cold. Pulse 60; respiration 22.

Head to be shaved, and ice-bag applied.

He passed a quiet night, and continued next morning in the same insensible condition. He lay on his back, with the knees partially drawn up, and his arms across his body, and resisted attempts to straighten them. He would not take food. The urine had to be drawn off. The bowels acted involuntarily. Pulse 84; temperature 99.8°. Ordered beef tea and brandy enemata.

On the 15th he still lay quietly on his back, with his eyelids closed, and breathing quietly. He showed no disposition to move, and kept the bedclothes drawn up over him, and at times held the edge of them between his teeth. He occasionally scratched his skin, and could swallow a small amount of fluid nourishment. He would not protrude his tongue when asked. The eyes were still divergent, more especially the right; the left slightly. He still lay in a flexed attitude. The limbs, especially the arms, resisted extension. He drew away the legs when the soles of the feet were tickled. Pulse 84.

On the 18th he was partly conscious, but still looked dazed and stupid. He opened his mouth when asked to protrude his tongue; told his name correctly, but his utterance was thick and indistinct, and mostly unintelligible. There was no palsy. Did not complain of his head; pupils equal. He now lay extended. Pulse 80, regular; skin cool.

On the 20th he was conscious, and the tongue was clearing. No pain. Answered questions readily.

The 23d was the brightest and clearest day he had since his admission. In the evening he became very restless, and later on, towards the following morning, sank again into an unconscious state, with heavy, labored, but non-stertorous breathing.

On the 25th he continued in the same unconscious state. Passed everything under him, and, indeed, had done so during the whole of the time he had been in the hospital except on the 23d. No rigidity; some slight occasional spontaneous movements of the

hands. Respiration labored, but noiseless. Eyelids drooped; conjugate deviation of eyes to the right, not persistent, but of spasmodic kind. When viewed both globes were seen to be twitched somewhat convulsively to the right, sometimes to the right and downwards, but never apparently to the left. Pulse 156, very small.

He died on the 26th.

Necropsy.—No external bruising, no ecchymosis in orbits. On reflecting the scalp, a thin layer of effused blood was found in the pericranium at the back of the head. No lines of fracture detected externally. On removal of the calvaria, the dura mater was seen to be much bulged anteriorly and laterally on the right side. A large quantity of blood-clot was found in the arachnoid cavity in this region, and on removing it the anterior extremity of the right frontal lobe of the cerebrum was seen to be extensively lacerated. The laceration involved more of the inferior than the upper surface, and on section was found to extend into the anterior cornu of the lateral ventricle, the immediate white matter being replaced by blood-clot. Fluid blood was found in the lateral ventricle. The laceration and softening of the white matter extended as far back as the anterior extremity of the corpus striatum, which also was slightly destroyed. No other lesion was found in the substance of the brain, but the cortical matter was lacerated almost symmetrically on the inferior aspect of each tempora-sphenoidal lobe. The loss of substance was greater on the right side, where a clot the size of a small walnut covered the anterior extremity of the lobe. On the left side the convolution bounding the lobe internally was the seat of the laceration. On stripping off the dura mater from the base of the skull, several small fissures were seen in the inner table of the parietal and occipital bones on each side, running off from the lambdoidal suture. This suture was also slightly separated, and its line readily traced by a small quantity of blood effused into it. The vessels at the base of the brain were slightly thickened. Thorax: Both lungs were more or less firmly adherent, and over the lower part of the left lung was some recent lymph. The lower lobe of this lung was partially consolidated, the consolidated mass being of small size, and presenting characters of red and grey hepatization. Both lungs were intensely engorged with blood. The viscera of the abdomen presented no special points of interest.—*London Lancet.*

PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

New York Pathological Society.

At a stated meeting held June 26th, 1878, Dr. E. C. Seguin, Vice-President, in the chair, Dr. Wesley M. Carpenter read the following report of the Microscopical Committee:

The Microscopical Committee, to whom was referred the spleen presented to the Society by Dr. Beverley Robinson at its stated meeting held June 12, 1878, submitted the following report:

On making sections of the organ, the cut surface was found thickly studded with small, round bodies, which had a whitish color, and were easily detached with a needle, springing out as it were from the surrounding tissue.

These bodies, when teased in glycerine and water, were found to consist of a basement-substance composed mostly of reticulated connective tissue, in which were embedded small round and oval cells, together with irregular-shaped and indistinctly nucleated masses, which probably were the so-called giant cells. On making these sections and staining them with hæmatoxylin, the little bodies presented appearances commonly seen in tubercle; that is, the central portion of some of them was changed into a granular and somewhat structureless mass which did not readily take the staining fluid; of others there was an abundant stroma, while along the borders were well-developed round and oval cells, and in places could be seen the irregular-shaped masses which have been referred to as probable giant cells. The spleen, therefore, contained miliary granulations which presented the gross and microscopic appearances of tubercle. Dr. Satterthwaite has examined the specimens and concurs in the above report.

Ligation of Lingual Artery near its Origin—Extirpation of Cancerous Disease of the Tongue.—Dr. George F. Shrady presented an epitheliomatous tumor of the tongue, which he had removed the day previous by operation, having previously ligated the lingual artery near its origin.

Dr. Post remarked that Dr. Shrady's case afforded a very striking illustration of the absence of anastomosis between the two sides of the tongue, the ligation of the lingual artery of one side being sufficient to control the hæmorrhage from the half of

the tongue removed. He stated that in the museum of the University there was a tongue which was enormously injected in one-half, while the remaining half was free; none of the vessels of the latter contained any injection, except along the line of the mucous membrane.

Dr. Sands said that the removal of cancer of the tongue was a very difficult operation, and one which was very unpromising in its results. There was probably no cancer more malignant than that of cancer of the tongue; no form of epithelioma which was more prone to kill quickly after removal. The question had presented itself to him whether the latter circumstance was not owing to the difficulties in extirpating the disease. He had often felt uncertain upon the latter point. The exposure of the morbid tissues was very difficult, even with the best means at our command; the size of the mouth was comparatively small, the light was usually bad, while the cavity was apt to be filled with more or less blood, which increased the difficulty of the undertaking. He stated that he had no experience in ligation of the lingual artery as a preliminary procedure. He had seen the artery tied but once in the place of election. In that case the difficulties of that operation were very great. The patient was an inmate of St. Luke's Hospital, and the operation was performed for a vascular tumor of the tongue. It struck him as a very formidable operation, and very much more difficult than he had been led to anticipate from dissections of the dead body. Very good surgeons had attempted to tie the artery and failed. Billroth was one such. He tied, as he supposed, the lingual as a preliminary operation, but was astonished to find, on making a section of the tongue, that the main artery bled very copiously, compelling the prompt application of the ligature. The patient died soon after, and at the post-mortem examination it was found that the lingual vein had been mistaken for the lingual artery. Considering the difficulty in securing the lingual, he preferred, when the disease was situated in the floor of the mouth and was extensive, to divide the jaw in the median line, and in that manner expose the diseased parts. This gave a very thorough exposure of the tongue and floor of the mouth, at the same time allowed easy access, without undue hæmorrhage, to the diseased parts. The objection to the operation was that the result was very often complicated with non-union of the divided bone. He thought another indication in the operation was to cut wide of the diseased tissues.

About four months before, a gentleman, on the eve of departing for Europe, came to his office with cancer of the tongue. Dr. S. sent him to a distinguished Parisian surgeon. The latter, as well as two other surgeons, agreed in the diagnosis and proceeded to remove the disease with the écraseur and the Paquelin cautery. It was stintingly done, and the wound never healed. A month afterwards the patient presented himself with an ulcer along the line of section.

It may have been possible that in that short time the disease had reproduced, but it was more probable that some of the disease had been left by the operation.

Dr. Briddon stated that he was present during an operation by Dr. Sands for the removal of the tongue by galvano cautery, and when the latter was indicated he could not conceive of anything that could answer a better purpose. In regard to the difficulties of ligating the lingual artery, a great deal might be said. He had seen an attempt made to secure the artery, and had witnessed its failure by a distinguished surgeon of this city; he had also seen the artery tied successfully. The operation, as performed by Dr. Shrady, and based upon an accurate knowledge of the anatomy of the parts, was divested of a great many of its difficulties. No surgeon who was not a thorough anatomist should undertake the operation. He could not conceive how it was possible to mistake the lingual vein for the artery. In Dr. Shrady's case the latter vessel was seen to pulsate distinctly as it was lifted upon the aneurism needle. The ligature was applied where it always should be applied, and, although in that situation it is said to be attended with more than ordinary difficulty, it was done with comparative ease, the whole procedure occupying less than twenty minutes. He believed that, when properly done, the operation was divested of danger. When the ligature was applied, as was the rule, within the digastric triangle, there was very apt to be hæmorrhage from the root of the tongue supplied by the dorsal branch.

Dr. Shrady remarked that in deciding upon the performance of the operation, he had several circumstances to take into account. In the first place, he promised the patient that he would not mutilate her face or divide her jaw, unless such was absolutely necessary. This ruled out the operations of Collis and Syme. In the second place, he believed that he could reach the disease more satisfactorily with the knife and scissors than with the écrasure,

especially as only half of the tongue was to be removed. In the third place, the patient's mouth was shallow, and the diseased parts could be brought within easy reach.

The only serious objection to such a measure was the hæmorrhage which might ensue, which objection was obviated by cutting off the entire blood-supply of that side of the tongue by a ligature of the lingual near its origin. He thought when the lingual was tied, the operation of removal of the tongue through the mouth was the one to be preferred, as there was then no danger of hæmorrhage, and the dissection could be carried on with ease and deliberation. Of course, when the disease involved the floor of the mouth to such an extent as to make it impossible to remove it otherwise than by a division of the jaw, the latter procedure was imperative. In his case he believed that all the diseased portions were removed without such an operation. And this was a better result than he had at first anticipated.

Dr. Carpenter remarked that the history of the case illustrated in a striking manner the value of an early operation. He had seen the case, in consultation with Dr. Lyons, in the latter part of March. At that time there was a simple ulceration surrounding the tooth, one inch in length by three-quarters of an inch in breadth. He thought that at the time it might have been easily removed by a simple excision. From a clinical point of view, the case, up to the time when Dr. Shrady saw it, was interesting. In the first place, there was an association of local irritation with the production of cancer. Secondly, as to treatment, there were some matters to be taken into account. The patient, not being willing at first to have an operation performed, was placed upon medical treatment. Arsenic was administered for a number of days, perhaps two weeks, and with marked benefit; the pain was very much less, and the angry look of the ulceration subsided. The disease then increased, when local applications of the arsenic were made, likewise with temporary benefit. Subsequently citric acid was applied, also with very good effect for a while. Subsequently to this, no medical treatment was of any avail; her pain was intense, and her condition became deplorable. Yet, in the beginning the disease could have been removed by a very simple operation.

Dr. Ripley had tried the arsenic treatment several times, but had never seen any special good from it. He referred to a case which was said to have been benefited by large doses of iodide of

potassium. The patient was treated in St. Luke's Hospital, but, shortly after this favorable report was made, rapidly died from cancer.

Dr. Briddon never experienced the slightest benefit from arsenic in such cases. Dr. B. asked whether in cancer of the tongue any benefit that might be derived from operation justified the use of any excessive mutilation, such, for instance, as section of the lower jaw?

Dr. Sands believed he could answer that question in the affirmative. Cancer of the tongue was a dreadfully painful disease, and justified severe treatment in any case. When there was a chance of removing all of the disease by splitting the lower jaw, that operation should be done. When there was no such opportunity, he favored the division of the gustatory nerve. He had performed such an operation in three cases with marked benefit, the excessive pain being thereby very markedly and satisfactorily controlled in two, while in a third it was entirely removed until the death of the patient three months afterwards.

Dr. Post remarked that in cases where it was expedient to extirpate the floor of the mouth for cancerous disease, the division of the jaw greatly facilitated the operation. It was, indeed, not a formidable complication for the soft parts, and there was not likely to be non-union of the bone when the divided ends were well wired together. He thought that the procedure added to the safety of the operation, as thereby the danger of hæmorrhage was diminished. When it was necessary to make deep dissections in the mouth and far back through the tongue, there was great difficulty in securing bleeding vessels, and the jaws could not be separated widely enough to admit the necessary light. He mentioned in this connection the case of an old woman from Long Island, upon whom he had performed that operation. He did not consider that she suffered thereby, or that her subsequent death was hastened by it.

Dr. Mason remarked that he had seen it stated somewhere, that when the tongue was removed by galvano-cautery there was more likelihood of secondary hæmorrhage. He mentioned a case in point, that of a female patient at the Roosevelt Hospital. One portion of the side of the tongue was removed by galvano-cautery, and she went home the following day. Within twenty-four hours afterwards there was violent secondary hæmorrhage, requiring a ligation of the vessel in the wound. Hæmorrhage recurred in

twenty-four hours, and the physician being apprehensive of the case, Dr. Mason ligated the lingual artery in the triangle.

Dr. Shrady thought that the splitting of the jaw complicated the recovery of the patient, and should be avoided, if possible. He did not believe it was necessary in his case, as the sequel showed. As far as the control of the hæmorrhage was concerned, that was effected by the ligation of the lingual, which for such an object was to be preferred to division of the jaw. The division of the gustatory was not indicated in his case, as all the disease could be removed along with the portion of nerve affected.

Removal of Congenital Cystic Tumor of the Thyroid Gland.—Dr. Sands presented a specimen that was of interest, on account of the rarity and severity of the operation for its removal. The patient was a girl of six years, in excellent health except for the disease which necessitated the operation. It was related by her mother that she was born with a large tumor of the neck, and also that the tumor had gradually increased, interfering by its size with the relations of the surrounding parts. It gave her no trouble, however, except by its deformity, until two and a half years ago, when it became inflamed and painful. It was lanced, and pus in considerable quantity was discharged. Shortly after being lanced it broke spontaneously, and discharged by two openings up to the time of her admission to the Roosevelt Hospital. The tumor then projected from the median line of the front of the neck, more to the left than the right, and was of a rectangular shape.

It was limited above by the hyoid bone, or seemingly by the chin, when the head was flexed. Below it extended nearly to the sternum. Behind, on the left, it reached to the posterior border of the sterno-cleido-mastoid muscle. On the right it extended to the anterior border of the same muscle. Everywhere the limits of the tumor seemed well defined. Above it did not involve the submaxillary triangle, in which situation, on the left side, the carotid artery might be felt pulsating, evidently below the base of the tumor. Just below that point the tumor pulsated, probably from resting on the artery below. This coïncided with the radial pulse. The base of the tumor appeared loose in its attachments and anterior to the important structures in the median line of the throat. The skin was adherent to the tumor beneath at these points only. There were no large veins in the skin over or about the tumor. There was a slight enlargement of the glands in the

left axilla. The consistency of the growth was firm and nodular, and at one or two places yielded a tense cystic feel. The tumor moved some on swallowing, which was done without difficulty. The voice was a little husky. Measurement of tumor: Complete measurement from side to side, 9 6-8 inches; complete measurement from above below, 6 6-8 inches; lateral measurement from behind forward, 4 6-8 inches; anterior surface of tumor in median line, 4x3½ inches; circumference of neck at middle, 14 6-8 inches· circumference of neck after operation, 9½ inches.

Treatment.—Patient brought in good condition for operation; December 5th, the patient being under ether, the operation for removal of the tumor was performed by Dr. Sands, assisted by Drs. Markoe and Mason. The tumor being well drawn over towards the left, an incision four inches long was made well over to the extreme left and posterior border of the tumor. The incision was vertical, extending from the lower border of the mastoid process above to nearly the lower extremity of the tumor below. The skin and fascia being cut through, the surface of the tumor, covered by a dense capsule, came into view. The external jugular vein was not exposed. The posterior flap was then dissected back from the tumor, showing numerous enlarged veins coursing over the surface of the growth; several of these were secured by passing threaded aneurismal-needles about them. The dissection was then continued by means of the finger, scalpel-handle, and scissors—curved on the flat backward towards the base of the tumor, which was drawn forward by blunt hooks. The internal jugular vein was soon exposed, with the carotid artery, felt pulsating beneath it. The tissues were now mostly torn or divided on a director, several ligatures being required on small spurting points. The lower end of a divided branch of the internal jugular vein, close to the main trunk, was guarded by digital pressure, and the dissection was soon brought to the left side of the larynx and trachea. Further advance in that direction was then temporarily arrested. A second incision from the middle of the first was then carried across the whole breadth of the tumor to the right side of the neck, thus completing a T-shaped cut. These flaps were rapidly dissected back, with scalpel and scissors curved on the flat, soon exposing the whole of the front of the tumor. The mass was then drawn over to the left side by hooks, and the dissection carefully carried towards the root of the tumor, about the larynx and upper part of the trachea.

One or two ligatures to small vessels were all that were found necessary. The child beginning to show symptoms of shock for the first time, the dissection was soon brought to a termination, the last attachment at the root being that to the thyroid cartilage, to which it appeared quite closely united. Everywhere else its limits appeared well defined by its capsule. Time for removal, forty-two minutes. The pulse and respiration, at this time, were still fair in quality, but very soon severe symptoms of syncope came on. Pulse and respiration almost imperceptible. Elevation of lower extremities of the body; application of Esmarch's bandage to the limbs. Injection of whisky subcutaneously and by the rectum, with inhalation of *pure oxygen gas*, resuscitated the patient, the last-named agents proving themselves markedly beneficial. The incision was then brought together by sutures, except at the most dependent parts on the left side, where a drainage-tube was inserted, held in place by a string about the neck. A dressing of carbolized oil spread on sheet-lint and covered by jute was put on. Although no large vessels were divided, there was considerable oozing and consequent loss of blood during operation.

At the close of the operation diligent search was made for the thyroid body, but none was found.

The progress of the case gives nothing of special interest to relate. The patient made a good recovery, the temperature never rising above $101\frac{2}{3}°$ F. The following was a report of the examination of the tumor by Dr. Delafield:

The tumor was seen after it had been soaked in dilute alcohol for twenty-four hours. At that time it measured $4\frac{1}{2}$x3 inches, and weighed 317 grammes. It was composed of a number of large cysts, some containing a thin fluid, some gelatinous matter, some atheromatous matter.

Between the cysts were many large and small nodules of hyaline cartilage, in parts infiltrated with the salts of lime. Between the cysts was also some soft tissue. This was composed partly of compact connective tissue, partly of tissue arranged so as to form a loose mesh-work.

In the spaces thus formed were rounded and polygonal nucleated cells; there was also some infiltration of similar cells in the adjacent compact tissue.

In a few places were large tubules lined with cylindrical epithelium, and rounded follicles filled with gelatinous matter and looking like follicles of the thyroid body.

Dr. Sands remarked that congenital cysts of the neck were extremely interesting in connection with questions regarding treatment by surgical operation. It was well known that in many instances the growth was quite rapid from the start, while in others no progress was made until adult life. Their deep-seated situation, and the frequency with which they involved important vessels and nerves in their neighborhood, invested any procedure for their removal with interest. The operation was undertaken in the case in question for the removal of a dreadful deformity in an otherwise beautiful child, and for the arrest of a discharge which was becoming very offensive and profuse. The operation itself did not promise to be a very difficult one, inasmuch as the finger could be passed behind the growth, and there were no evidences of deep-seated adhesions. The sequel proved, however, this conjecture to be erroneous.

The tumor was interesting in regard to its probable nature, or rather to the texture in which it took its origin. The question was, whether the tumor simply originated in the thyroid gland, or was a congenital tumor of that gland. So far as he had been able to ascertain, there was very little known concerning congenital tumors of the thyroid body. Von Ammon spoke of congenital tumors that attained considerable size, but the satisfactory evidences of their true nature were wanting. Mr. Holmes, fifteen years ago, said that when such tumors were found they should not be detached. Dr. Sands did not think that the real difficulties of the operation were increased, whether the tumor was in the thyroid body or not. So far as the operation was concerned, even if the growth had such an origin, the vascularity of the thyroid body would be wanting in the tumor. Whether the tumor did have its origin in the thyroid body could not be told. The tumor rose and fell during deglutition, was firmly attached to the thyroid cartilage, and after its dissection no trace of the thyroid was discoverable. On the whole, in absence of proof to the contrary, he was inclined to look upon it as a congenital cystic tumor of that gland.

Wound of Axillary Vein.—Dr. Post wished to state that the patient from whom he had removed a large tumor of the breast, involving the axillary vein, and whose history he had presented at the previous session, died a few days after the operation.

Cheloid Tumors of the Ear.—He then presented some cheloid tumors removed from the lobes of each ear, the result of wearing

ear-rings. In order to cover the parts from which the growths were removed, a supplementary plastic operation was performed. The patient being under ether, the tumor in the left lobe was cut out, preserving a small portion of the integument from the interior as well as from the posterior part, being able to form a lobe by these two pieces being brought together by sutures. On the right side the tumor was removed, preserving a small part of integument on the interior portion, but was obliged to cut all the posterior part of the integument up to the helix. To supply the deficiency a triangular flap of integument, with its base uppermost, was dissected from the inframastoid region of the neck, and doubled upon itself so as to be attached by sutures to the internal and external margins of the flap of integument which had been preserved in front. The sides of the triangular wound from which the flap had been taken were brought together by one pin suture and a number of fine silken ones. Two head sutures were employed to bring together the new-formed lobe.

Fibro-plastic Tumor of Calf of Leg.—Dr. Post lastly exhibited a fibro-plastic tumor of the gastrocnemius muscle, which he removed by operation from a lad eighteen years of age. Although the entire substance of the muscle was removed at the situation of the growth, the wound healed by first intention throughout its entire extent, except at the situation of the drainage-tube.

A Case of Round Gastric Ulcer with reference to its Etiology.—Dr. R. W. Amidon presented a specimen of ulceration of stomach, illustrating the origin of the disease. The history was as follows:

March 27, 1878, a male, aged thirty-seven, fell fifteen feet, breaking four ribs. Eighty-two days later he died of a combination of pneumonia and pyo-pneumothorax, having manifested during his sickness no symptoms of gastric disturbance. On post-mortem examination, in addition to the pulmonary lesions, which we will pass over, was found marked atheromatous stiffening of the aortic valves, with moderate atheromatous degeneration of the aorta. On the lesser curvature of the stomach was found a healed round ulcer. The ulcer was one and a half inches long by seven-eighths inch wide, and at one margin quite deep; its base, evidently, when new, reaching or penetrating the muscular coat.

On the base of the ulcer, which was covered by smooth cicatricial tissue, were two depressions giving the ulcer more or less of a funnel shape.

In the subserous areola tissue, at some distance from the ulcer, were seen two arteries with their venæ comites leading directly to the ulcer. When followed by a delicate director and scissors their lumen is found to be abruptly occluded directly under the ulcer.

For many years German (Virchow first), and later authorities, have maintained that true or round gastric ulcer had for its sole cause circumscribed interruptions of blood supply; i. e., either thrombosis or embolism. To the former cause can be traced ulcers occurring in anæmic, chlorotic, and marasmic subjects, where no lesion but the ulcer can be found on post-mortem. To the latter cause can be traced ulcers occurring in subjects having endarterial or endocardial disease. In the present case the existence of endocardial disease points conclusively to embolism as the cause of the ulcer. It is well known that only the free surface of the gastric mucous membrane affords an acid reäction, the deeper tissues being alkaline. It is this alkalinity which prevents self-digestion of the mucous coat by the gastric juice. This alkalinity is kept up only by the constant renewal of the alkaline fluids by the blood. Experiment has shown (Cohn, Klin. d. embol, Gefässkrkh, p. 515) that cutting off the blood supply, as in ligation of the cœliac axis, self-digestion takes place; while introduction of foreign bodies (emboli) causes ulcers (Panum). The circumscribed patch, cut off by embolism from arterial supply, loses its alkaline reäction, and is digested by the gastric juice.

The Microscopic Anatomy of Necrotic Bones.—Dr. C. Heitzmann presented microscopic specimens of necrotic bones. The structure of both healthy and necrotic bones had been studied in his laboratory by Dr. C. F. W. Bödecker, who succeeded in finding out striking differences between the two, which up to this time were entirely unknown. The observations were summed up in the following results: In the healthy bone, the so-called lacunæ contain protoplasmic bodies with a distinctly visible net-like arrangement, to be regarded as the living matter of the protoplasm. The basis substance is pierced by numerous coarse and fine canaliculi, communicating with each other, as well as with the lacunæ. The protoplasmic bodies, which do not quite fill the lacunæ, send offshoots of the living substance into the canaliculi, but can only be seen in the coarser ones. In the necrotic bone, traces of former osteitis are visible, but no blood-vessels present in the Havesian canals, which are filled with organisms of decomposition, namely, micrococci. In necrotic bone, most of the lacunæ

contain no protoplasma, but either a coarsely granular or a structureless mass, remnants of the living matter and coägulated albumen. C. F. W. Bödecker's paper has been recently published in the "Philadelphia Dental Cosmos".—*N. Y. Medical Record.*

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

The Constituents of Climate, with Special Reference to the Climate of Florida.

BY FREDERICK D. LENTE, A. M., M. D.

PALATKA, FLA., 1878.

NOTE.—This article is written in epistolary style at the suggestion of the editor.—F. D. LENTE.

But tourists and the great majority of invalids are only concerned with the *winter* climate of Florida; and while it can not be denied that persons may contract ague here in any season of the year, just as they are doing all over the country, especially of late, yet it is so rare among visitors that it need not, and should not, enter into the calculations of those whose condition calls for a winter residence in a mild climate. No climate on earth is perfect. Persons who have suffered for years from malaria at the North have recovered from its effects here; the escape from the injurious influence of a severe winter and a changeable spring having improved the tone of the nervous system. The writer affords an illustration of this. Having suffered for a long time from malarious fever among the picturesque and formerly salubrious highlands of the Hudson, he was strongly advised by his medical friends at the North not to remain longer on the St. John's than the first of April. He did, however, remain until near the middle of May, has continued to remain late in the spring for three years, and has entirely recovered from his malarious torments, though failing to get relief previously even in Saratoga. As another illustration of the immunity from fever here in the winter, enjoyed by Northern vis-

itors, it may be worthy of mention that of the large number of employés of the hotel in which the writer boards, and the proprietor's family, scarcely a case of fever has occurred in three years, although they remain until May, and most of them are by no means very careful of their health.

It is well known among physicians that other causes than *miasm* or the emanations from swamps, are capable of producing, and are actually producing every day, symptoms precisely analogous to those of intermittent fever, and which yield to the same treatment; and it is well that visitors to Southern resorts should understand and remember this: First, that they may, as far as possible, avoid these causes; and, secondly, that they may not be frightened away from a pleasant and suitable locality under the fear that their symptoms are caused by influences arising from its surroundings, instead of, perhaps, their own want of prudence.* Some experienced and thoughtful physicians who have so constantly observed malarious attacks arising from causes which could not possibly be connected with marsh miasm, have gone to the extreme of denying that the latter ever has anything to do with these attacks. Dr. Black, of Ohio, has read two interesting papers on this subject before the American Medical Association; and facts, furnished by high authority, abound all through medical literature which tend to support his views. But, as usual in such discussions, the medium course is the safest. The fact, however, that so much doubt should have been engendered in the minds of medical men indicates that, at least, sometimes, and I think frequently, intermittent fevers, and malarious attacks allied to them, occur from causes having no necessary connection with marsh miasm; also, that when the effects of miasm have long disappeared from the system, these causes will re-develop the disease. Among these numerous agencies may be mentioned, in general terms, any cause which tends to lower vitality; want of proper food, nerv-

* Patients with pulmonary disease ought also to be informed by their physicians that the chills and fever, which are precisely like the miasmatic as regards their phenomena, are apt to occur as an incident of their disease. But in such cases, medical advice should always be sought, as it is important to determine whether there is or is not a malarious complication.

ous shocks, exposure to wet, or to severe cold, or long-continued cold, depressing emotions, excessive diurnal variations of temperature, etc. Dr. Black lays great stress on the latter. Some of these causes will develop malarious symptoms *de novo*, while some will only re-develop them when they are slumbering. A notable example of the latter, the effects of cold on a population, occurred in the practice of the writer a few years ago. There had been a great prevalence of malarious fever during the summer and autumn, but cooler weather and finally frosts caused their disappearance to a considerable extent. But in midwinter an unusually low temperature continued for a number of days, and immediately after there was a great increase in our fever cases. The effect was precisely what we have witnessed in summer after a prolonged hot and dry term. There is not space to multiply cases, which might be done to any extent. I will only mention one striking instance. The son of a distinguished practitioner of New York City, himself a physician, young and robust, never having suffered from any form of malaria, was called to Bloomingdale to assist in a surgical operation. On his way he was caught in a sudden cold shower, and his feet and legs got quite wet. It was necessary that he should wait with the patient two hours, but on his return home he changed his clothes. On the following day he was seized with a chill followed by fever, and for months he suffered from intermittent fever, and finally, after the failure of drugs to give permanent relief, he went to Europe, and recovered there. The converse of this proposition is also true; malarious fever will, after the failure of quinine and other supposed specifics against miasma, yield suddenly and permanently to nervous shock; for it is to this, I think, that we must attribute those recoveries which take place after swallowing some huge or some particularly disgusting dose, as a pint of vinegar, or live earth-worms taken in molasses, in the virtue of which the vulgar have such implicit belief, and perhaps also in part to the mental impression derived from this confidence. A medical friend of the writer, after having suffered more or less for years from malarious fever, and losing nearly all his hair, was cured by the advice of an old nurse, who told him to apply a wilted tobacco leaf over his

abdomen. He had never used the weed in any form, and in a few hours he was more wilted than the leaf, but his old enemy was vanquished from that day. In fact, the disease commences in a morbific influence of one kind or another on the *nervous system*, and is cured by such remedies as act on this system, which have no specific influence on the blood and no *antidotal* effect whatever. This morbific influence is often exerted on the cutaneous surface, and may be prevented, to a great extent, in a malarious region by wearing woollen next the skin, and by fires night and morning, especially when the diurnal range of temperature is unusually great, which preventives, the best we have, can not be said to exert any influence on marsh miasm. Quinine, when taken as a preventive, and it is a more or less reliable one, acts by fortifying the nervous system against depressing influences, and not through any supposed neutralizing effect on a specific poison circulating in the blood. So much for malaria, which has become an interesting topic in all parts of the country of late, in the parlor as well as in the doctor's office; and to which the writer regrets having felt himself obliged to devote so much space.

Rain-fall and other Hygrometric Conditions.—Very little space need be devoted to rain-fall, since it is now conceded that, in the first place, the mere *amount* of rain in the year, or in the winter, without a statement of its *distribution* over the months and even the days, is of no value; and, in the second place, that a certain amount of rain, if it falls rapidly, and does not recur at too short intervals, is beneficial in various ways, but especially as one of the best purifiers of the atmosphere, dissolving gases, and carrying down with it dust and animal and vegetable impurities. In some localities there is almost no precipitation of moisture (rain-fall), yet the air is constantly loaded with moisture almost to saturation.* With regard to the hygrometrical con-

* "At Cannes," says Madden (Health Reports of Europe and Africa), "the amount of rain-fall is about five inches more than in London; but notwithstanding this, Cannes has incomparably a dryer climate than London; the number of rainy days in the former being 52, while in the latter it amounts to 78."

Catania, a noted health resort of Sicily, has 78 inches in the year, and yet

dition of the air of Florida, almost as erroneous ideas exist as in the case of malaria. Dr. Walton's charts* give us some curious information, and indicates how little value is to be attached to the amount of rain-fall as a climatological fact. Thus Aiken, whose reputation is based principally on the dryness of its climate, has nearly one-third more rain in the winter and spring months than Palatka; while Alexandria, noted for an excessively moist climate, situated as it is "on a low, sandy peninsula between the sea and the wet swamp known as Lake Mareotis," has less than one-third as much rain as Aiken, and slightly less than half as much as Palatka. Mentone also has more rain than Palatka, and double the amount of St. Augustine. The tables of Dr. Baldwin, a most careful observer, give for the five months from November to March, inclusive, 21.3 rainy days out of 121 days, one day in six; though it did not rain all day on many of these days, such an occurrence being not very common in a semi-tropical climate even in summer. "Whilst on the northern lakes," says Forry (op. cit.), the annual ratio of fair days is only 117, on the coast of Florida it is 250, and at Fort King" (now Ocala), "in the interior, it is 309." From twenty-five years' observations, says Dr. Baldwin, January has had an average of 20.3 clear days; February, 19.5; March, 20.4; April, 25; May, 22.1. For the whole year, 235 clear days. This was in Jacksonville.

Relative Humidity.—A much more important constituent of climate than rain-fall is the amount of moisture suspended in the air. When the air is *saturated* with moisture, we say it contains 100 per cent.; when one-half or one-quarter saturated, 50 or 25 per cent. But as air at one temperature is capable of holding more or less moisture than at other temperatures, in

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there are fewer rainy or cloudy days there than in almost any of the noted European resorts, from the fact that almost all the rain falls in a month or a month and a half.

The extremes of precipitation are the deserts, where there is none at all, and on the Khasya Hills, 200 miles from the city of Bengal, where 600 inches fall annually. Cameron, Manual of Hygiene.

* A Comparison of European and American Climatic Resorts, with original Charts in Colors. George E. Walton, M. D. 1877.

order to compare the humidity of different climates, we must take into account the temperature also; and when the calculation is made with reference to this, we call it the *relative* humidity. But, like the rain-fall, the tables of relative humidity seem to fail in giving a very correct idea of climatic humidity; and, as we shall presently see, it is desirable to take into account a variety of other indications. Thus, Dr. Geddings* gives a table comparing the relative humidity of three prominent Southern health stations. Aiken, 64.04; Asheville, N. C. (reported a dry climate), 70.10; Jacksonville, Florida, 69.72; according to Dr. Baldwin, 69.90. For my own observations, I had used for two winters Saussure's hygrometer, until I found, by comparison with those of others and from other indications, that it was not reliable. During the months of February, March, and April, 1878, using a Mason's psychrometer (wet and dry bulb) and comparing my observations with those of the signal officer at Jacksonville, the relative humidity for three months in 1878, is for that city 66.2; according to Dr. Baldwin's observations for several years, 62.6; while for Palatka it is 61.3. Palatka is undoubtedly a dryer climate than the stations on the river further north, fogs less frequent and less persistent. Dr. Geddings also gives a table comparing the humidity of Aiken with that of eight prominent European health resorts; from which table it appears that the humidity of Florida for the year is less than in five out of eight (including Mentone), while Aiken has less than six out of the eight. About all of our American resorts appear to have the advantage over their European competitors both as regards *relative* humidity and rain-fall. Recognizing, however, the difficulty in forming any correct judgment as to the comparative dryness of climates from these scientific data, Dr. Geddings proposes certain other tests, the most of which, it must be conceded, are pretty reliable; for instance, he says, the mean relative humidity of Aiken being only 64.04, that place, according to Vivenot's classification, would rank only as "moderately dry," but tested by the more popular signs which he gives, "it would be considered *very* dry." These

* "Aiken as a Health Station." Charleston Medical Journal, 1877.

signs are of a *moist* climate, heavy dews, frequent fogs, melting of salt, vapor condensing on walls, steel and iron quickly rusting, rapid formation of mould, mosses flourishing, perspiration remaining long on the skin. Dr. Madden (op. cit.) says also: "The extreme humidity of this climate (Madeira) is shown by the impossibility of keeping steel instruments free from rust, or of preserving any musical instruments in tune, or any article of clothing, however carefully packed, from being injured by the dampness of the air, as well as by the exuberant tropical vegetation," etc. Examining the effects of moisture during the winter and spring months in this village (I have now spent three seasons in Florida, and we are not, at present, concerned about them), *dews* are frequently heavy. During my first winter here, however, dew did not commence to deposit until near 12 o'clock at night. During the past two winters it commenced earlier. *Fogs* are infrequent, and when they occur, are almost invariably dissipated by the sun at an early hour, before invalids have had their breakfast. Nearer the mouth of the river, they last longer, and are more frequent. *Salt never melts*, and never causes any inconvenience from dampness. I have not seen *vapor condensing* on the walls or stair-rails but once in three winters. I take no precaution against the *rusting of my steel instruments* in winter or spring, and they are free from rust in the spring. *Mould* seldom forms here, so far as I have observed. We must plead guilty to *mosses*. The *Tillandsia Noneoides*, or Spanish moss, which, as Dr. G. remarks, "adds so much to the solemn grandeur of our Southern forests," is admired as much as any of the novelties which a newcomer sees here. Undoubtedly, this does not grow in a dry atmosphere. But there seems to be something more than moisture which is conducive to its growth, since a tree standing by itself on high and dry ground and unprotected from the sun, is frequently covered by a more dense growth than many of the same species standing in a wet swamp, to which the rays of the sun have but slight access. As regards the deficient evaporation from the skin, a few notice it occasionally, but the majority do not, probably because there is generally more or less breeze. Dr. Geddings then gives the popular characteristics of a *dry* climate; but, as these

are mainly the opposites of those of a moist climate, it is only necessary to allude to three—the "desiccation of meats and their slower decomposition"; "the certainty with which matches take fire even in unheated rooms"; and "the frisure of women's hair, the crimps and curls retaining their form for days." As regards the first test, it is a fact which I confess astonished me, that beef, when hung up in a current of air, will keep longer than in a like temperature at the North, and that venison will desiccate on the surface, and keep much longer than beef. As regards the second, I rarely, if ever, find one of the commonest matches, kept in an open box on the first floor in my house and at the hotel, miss fire. I *have* had trouble with a similar article in my office in New York. I have never heard any complaints from the ladies about their *hair*, but they might not think it worth mentioning to a doctor. Dr. Madden alludes to the difficulty in Madeira of keeping musical instruments in tune. There *is* a difference in this respect between Florida and some dryer climates, especially as regards catgut, but not enough to cause any very great inconvenience, and there is very little influence as regards pianos. I have not observed any damage to clothes packed and left through the summer. The writer has thought it of sufficient importance to notice in detail these tests, the best we have at present, and he is certain of the correctness of his statements, according to his own observation, and that of others here to whom he has submitted these questions. And we also find that this corresponds with what we shall infer from a comparison of the *relative humidity* as taken from different records, with Vivenot's classification, which is as follows: *Moderately dry*, 56° to 70°; *moderately moist*, 71° to 85°; *excessively moist*, 86° to 100°. The relative humidity for the year being 69.6 (March, 57.5, lowest; September, 76.8, highest*). This brings the climate very nearly under the head of *moderately dry*.

It is to be hoped that the above facts will go far towards refuting the wild statements which have been indulged in very generally with regard to the excessive moisture of Florida climate, as well as to the presence of malaria. "While many

* Baldwin, op. cit.

authorities concur," says, Dr. C. T. Williams,* "in the superiority of dry to moist air, there are none the less some who assert, with equal positiveness, the reverse. In fact, the evidence on this point is conflicting; and this is no doubt due in part to the fact that humidity is a relative term, and that the *degree* of humidity has not been stated or studied with sufficient precision." Those who seek anxiously for *dry* climates overlook perhaps the fact that a *certain degree* of moisture in the air is absolutely necessary to prevent a great diurnal range of temperature, which these same persons equally deprecate. In Florida, for instance, were it not for a certain amount of moisture in the air, and a certain amount of deposit of dew, instead of a fall of 13° or 14°, we should have one of 30° or 40°, probably. The fall is 40° in the dry climate of Upper Egypt; and in sandy deserts, as Sahara, where the dryness is absolute and radiation at night unrestricted, the temperature falls to 32° F.; the temperature ranging during the day in the shade above 100° F. On our Western plains, the range is sometimes 60° F., so that the body is almost burned up by day and frozen by night. In Florida, as we have seen by previous statements in this paper, the moisture is just sufficient to temper the heat during the day by evaporation, and by condensation and the checking of radiation to limit the cold at night. Even the summer heat is in this manner, and with the aid of a pretty steady prevalence of east winds, rendered very tolerable, the evenings and nights even pleasant.

Purity of the Air.—In estimating the climatic advantages of different health resorts, too little attention has been heretofore devoted to what may be technically called the *purity* of air. The common idea of purity has been freedom from unpleasant odors; yet the gases, which these odors indicate, are the least injurious of ærial impurities, and rarely exist in sufficient concentration to do harm. The chemist spends a considerable portion of his time in his laboratory, surrounded by various gases in a far more concentrated form than they are met with in the atmosphere (if we except a few which are never found in the atmosphere), and comes out unscathed. The gases from a sul-

* Lettsomian Lectures. British Medical Journal, 1876.

phuric-acid factory on the Hudson river have destroyed trees for long distances, and even on the opposite bank of the river, and yet, on examining the workmen in the factory, I could not find that they were much inconvenienced by them after becoming accustomed to the irritation of the laryngeal mucous membrane. Carbonic-acid gas, which enjoys the reputation of being the most dangerous, rarely exists even in the most crowded rooms in dangerous quantity, and is not of itself poisonous. The difference in the amount of gas in city and country is not material; for instance, Lake of Genoa, .0439 in 100 volumes of air; Chambeisy, .0460; various parts of London, .0300 to .0420 (Angus Smith's tables). The air in different theatres in London at night varied from .101 to .320. It has been commonly supposed that the 260 out of 300 prisoners confined in the Black Hole died from inhaling carbonic-acid gas, or from the deficiency of oxygen caused by its presence. But later observations, and especially experiments on living animals (Gavarret and Hammond), indicate that they died as much from the poisonous effects of organic matter in the air as from the excess of carbonic acid or deprivation of oxygen. Mr. Ernest Hart* says: "The captives in the Black Hole in Calcutta did not perish (or even suffer) for lack of oxygen." We must then look to the solids and not to the gases of the atmosphere for the causes of disease. Tyndall has lately alluded to the important fact that equally expert experimenters in treating fluids by similar methods for the *destruction* of these organisms, have failed to arrive at the same results; for which he assigns the reason that the air is in one locality purer; that is, less infected with germs than in others, and that the different fluids experimented upon were therefore contaminated by them in different degrees. Pasteur, says Tyndall, found the Glacier air of the Mer de Glace, and equally in the caves under the Observatory of Paris, free from germs of putrefaction. It is these germs, and these only, which these scientists have demonstrated to be the principal, if not the only cause, of putrefaction and decay in organic substances; and, as we may infer, of the suppuration, gangrene, septicæmia, and the consequently increased mortality of inju-

* Manual of Public Health, London, 1874.

ries, and wounds, and surgical operations in camps and hospitals; that is, where patients are more or less crowded, which the reasoning and the patient experiments of the celebrated surgeon of Glasgow have almost abolished by his process for destroying the vitality of these germs in the air in the immediate vicinity of wounds and operations. The operations being now carried on in an antiseptic atmosphere produced by a fine spray of carbolic acid or thymol. The destructive diseases of vegetable life have also been successfully assailed through the knowledge derived from Pasteur's experiments. These very important facts, established through the genius and patient industry of the French savant, may yet enable us to limit the action of epidemics now so destructive to human life; for Schrœder and von Dusch have found that atmospheric germs may be excluded by a cotton filter, and it has, long ago, been asserted, and to a certain extent proved, that the cause of malarious manifestation, whatever that may be, can also be excluded from a room by a similar contrivance, as a thin cotton screen placed in the open windows.* It has heretofore been an unaccountable fact that diphtheria and similar diseases prevail to a far greater extent and with far greater destructiveness in some localities than in others not very distant, and where hygienic conditions are similar or even superior;† that cholera and yellow fever, for instance, sometimes assail and prove more fatal in portions of a city supposed to be in a superior sanitary condition, and assail or only moderately afflict those in such a condition as seemed particularly to invite disease.‡

* A thick belt of trees, and of the sun-flower plant will also intercept these germs. The eucalyptus has lately become especially the subject of experiment wherever it will grow. It is not certain whether it acts simply as a filter, like other trees, but more effectually because its foliage commences close to the earth, or whether the effect is jointly due to this and some specific influence in virtue of its remarkable balsamic odor; perhaps, in wet localities also, to its draining property. Its extraordinarily rapid growth necessitating a great supply of moisture from its roots.

† The Report of the Boston Board of Health states that diphtheria has prevailed to a greater extent in the better districts of the city.

‡ One must not infer that this statement invalidates any of the cautions which sanitarians are now so industriously urging on the public with regard

In a warm and moist climate like that of Florida, we should expect to find putrefaction and decay particularly active, but the facts are, so far as my observations have extended, that is, in this village and along the river for some distances, that milk sours and meat putrefies at a lower temperature, or sooner in the same temperature in the northern sections of our country than here. We have already described the behavior of fresh meat when exposed for some time to currents of air. Applying the preceding consideration to these facts, we must conclude that the air here, though moderately warm and damp, conditions which, of course, give particular activity to germs, must be notably free from those agents of decay and putrefaction; and we should also infer that wounds would progress in a particularly satisfactory manner, which is a fact; also that diphtheria* is unknown, as is genuine cholera, typhoid fever, and erysipelas, and scarlet fever rare and mild. Whether the purity of the air here, that is, its comparative freedom from putrefactive germs, and its exemption from those diseases, bear the relation of cause and effect, can not yet be demonstrated, but it may reasonably be inferred.† At all events, a belief in this

to the importance of cleanliness and disinfection as a means of arresting disease or limiting the spread of epidemics. It must be understood that these, though occurring not infrequently, are exceptional cases, and are still inexplicable, but which present indications assure us will soon be better understood.

* In the year 1876, according to the Report of the Brooklyn Board of Health, there were, in that city alone, 2,329 cases of diphtheria and 812 deaths. In 1878 this disease, according to the "Le Progrès Médical," carried off 2,393 persons in Paris. M. Besmer observes that density of population has little if any influence in determining the disease, but poverty is very distinctly concerned in promoting its development. This, if so, speaks well for the purity of the air here, for there is poverty enough among the native inhabitants. *Bad drainage* is thought in this country to have an important influence in promoting the disease, and there are cities in this State which will afford unusually fine examples of this, and yet we see no diphtheria.

† The army surgeons during the late war found that a *thorough* application of carbolic acid to the streets, lanes, yards, and houses of districts infected by yellow fever in New Orleans, decidedly limited the spread of that disease; and the practice has been continued there ever since.

Surgeon-Major Tuson, Sixteenth Royal Cavalry, has frequently observed, says the "London Lancet," the beneficial effects of burning fires in the epi-

relation is fast establishing itself in the minds of some of our ablest thinkers, as Nott, Sansom, Huxley, Tyndall. "It has been established beyond all doubt," says Schrœder (op. cit.), "that these organic substances, be they the gaseous products of putrefactive processes in the animal or vegetable kingdom, or vegetable germs, or microscopical animalcules floating in the atmosphere, do reach the lungs in the current of air inspired, and are there capable of doing great mischief." "The observations of Schrœder, and especially of Pasteur," says Parkes (op. cit.), "are likely to have an important influence on the doctrines of etiology." "The septic condition of the air, as Dr. Sanderson has termed it, derives importance from the possibility of its being concerned in the production of some of the so-called zymotic diseases."

When we know that wounds and sores on the surface of the body are so injuriously affected by these germs or "seeds of disease," and that so great a change in the result of surgical operations can be wrought by preventing this access to raw surfaces, we may well imagine how injurious an influence may be produced on ulcerations and other diseased processes going on in the lungs, whenever these bodies are abundant in the air, which is constantly brought in contact with them through respiration.

Ozone.—This agent is supposed to be closely connected with the purity of the atmosphere, being apparently a more active form of oxygen, and converting injurious substances floating in the air into inert compounds. The subject is, however, in a rather chaotic state as yet. Within the last year or two numerous observations in different parts of the country have been

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demics of cholera in India. But as in the case of the use of carbolic acid, it must be done thoroughly. The author cites instances in which the disease apparently speedily succumbed after thorough fumigation of the affected villages and streets. The piles of wood were placed at short intervals of space, and kept burning for forty-eight hours; the sulphur is sprinkled on so as to keep up continuous fumes, while the houses are at the same time carefully fumigated. The process is disagreeable to the sense of smell, as is the carbolic acid, but not dangerous if intelligently supervised. Carbolic-acid vapor and sulphurous-acid gas are the most destructive agents against these "seeds of disease."

made by medical men mostly; but it is extremely doubtful if any of these have much practical value, from the fact that we are not yet in the possession of any reliable test, of one which will give the reäction of this agent and of no other which might be confounded with it. Schönbein's papers have usually been employed, but so many other bodies are present in the air which are capable of producing a similar reäction, especially nitrous and hypo-nitrous acids, and even nitric acid and peroxide of hydrogen, that we can not be certain of the amount or even the existence of ozone. Howzeau's test is claimed to be less open to this objection, the iodized red-litmus paper; but Professor Leeds, of the Stevens' Institute of Technology, who has experimented largely with ozone in Hoboken and in the Adirondack Mountains, informs me that this paper, in an artificial atmosphere of peroxide of hydrogen, gives the reäction of ozone, and that it is also not sufficiently sensitive. He states that peroxide of hydrogen has lately been detected in the atmosphere for the first time by Struve, a Russian chemist. Schreiber, in his recent paper (op. cit), reïterates the assertion often made before that pine forests are instrumental in the production of ozone. He says: "It has been the custom for quite a long time to recommend the pine woods as a place of residence for pulmonary invalids, but the 'why' of the process has only recently been discovered. The turpentine exhaled from these forests possesses to a greater degree than all other bodies the property of converting the oxygen of the air into ozone, and as the latter destroys organic matter, the air of such forests must be, and consequently is, conducive to respiration."

This was Schönbein's idea, because the oxydation of turpentine oil and other essential oils in the air caused the characteristic reäction of ozone on iodide of potassium. But "the nature of this compound has lately been examined by Ringzett* (Chem. Soc. J [2] xij, 511), who finds that it can not be either ozone or peroxide of hydrogen, because it is destroyed at the boiling point of oil of turpentine (160°), at which temperature ozone and H. P. are permanent. Moreover, it resists, to a certain extent, the action of sodium thiosulphate, and its solution in

* See Watts' Dic. of Chemistry. Sec. Suppt.

water retains its properties after long-continued boiling." "Mr. Burgess, the inventor of the process for making paper from wood, found that the introduction of a few drops of oil of turpentine into his bleaching-room would not only prevent the further formation of ozone, but would even destroy that already existing."* It is very likely, however, that the terebinthinate odor is, of itself, rather soothing to diseased respiratory membranes; but it is so diluted that, at a very short distance from the forest, it is lost entirely; and to be benefited at all, the patient must live pretty much all the time in the midst of the trees.

The character of the *soil* and *subsoil* is of almost as much importance, in some parts of the country of more importance, indeed, than the conditions of the air. Dr. Bowditch has published some valuable statistics on this point. A soil retentive of moisture, or a stiff and clayey subsoil impervious to it, and not thoroughly drained, is always prejudicial to the health of the inhabitants. Parkes† says of soils: "Some soils absorb and retain water more than others." "Sand absorbs very little," water passing through rapidly; "clay ten or twenty times more; and humous or common surface soil more than forty or fifty times as much as sand." "The sands are therefore the healthiest soils in this respect. In hot countries, the sand is objectionable on account of its heat, unless it can be covered with *grass*. The effect of *glare* on the eyes is obvious, and in the tropics this becomes a very important point. If a spot, bare of vegetation and with a white surface, must be used for habitation, some good result may be obtained by coloring the houses pale-blue or green." "The amount of *dust* given off from soils is not a matter of slight moment." With regard to permeability, no soil is better capable of fulfilling this requirement than that of Florida, as such is the predominating and sometimes the only ingredient in the localities where invalids congregate, although it is not fair always to judge the soil of Florida any more than the other constituents of climate by

* Amer. Jour. of Med. Sciences, 1874, p. 420.

† Manual of Practical Hygiene. London, 1866, p. 267, et Seq.

appearances. In some localities the soil, which has the appearance of almost pure sand, being quite productive. But everywhere the soil is permeable. Palatka, unlike any other locality in the State, is covered with a sod of green grass, for which exception no one has been able to offer any conclusive explanation. This obviates here many of the objections urged by Dr. Parkes to sandy surfaces. The comparative exemption from *dust* is no mean advantage to invalids suffering from lung or throat difficulties or weak eyes. Some southern resorts, otherwise unobjectionable, being rendered entirely unsuitable from this cause. We all know the serious effects produced on the lungs of artisans working at dusty trades.

Another topic deserves mention here; it can not strictly be called a constituent of climate, but it has a great deal to do with the success of climatic treatment—the advantages which any particular location may present for *occupation* and *social enjoyment*, and without crowding the invalid class in too circumscribed a space. Patients must have some occupation and amusement, and the more the better. Brooding and idleness are always dangerous to invalids. Boating, shooting, fishing, riding, especially horseback, excursions, reading (but not too much of it) should be encouraged as far as the strength of the invalid will admit. Some will always find occupation and interest anywhere, while the great majority require to be induced, encouraged; and, of course, the more varied the means the better the chance of success. Thus, a residence on a river or lake, especially if they are thoroughfares for commerce and travel, is preferable, *caeteris paribus*, to inland localities, since the choice of sport and recreation is more varied. Patients should be taught to *exert themselves* to become *interested* in what is going on around them in their new residence.* Lanier, the poet, who has written a very interesting work on Florida, himself an invalid, forced to resort thither for his own safety, says,

* In the case of Florida, I will advise the visitor, in order to become more interested in the industries, the occupations, the products, the sports of the State, to take the "Florida New Yorker," or the "Agriculturalist," the "Semi-Tropical Magazine," one of the best periodicals in the country of the kind, one or all of these, or the "Forest and Stream," and to read "Halleck's Camp Life in Florida."

in giving the same advice: "The field of Florida in these matters" (agriculture and products) "is yet so new, so untried by the resources of modern agricultural improvement as to be full as fascinating, if one should get one's interest aroused in it, as it was in the old days when the Spaniards believed it to be full of gold and pearls." If the invalid can not feel satisfied away from home, can not keep his mind from brooding over his business interests or family affairs, he had better return to these, and avoid the unnecessary sacrifice of money and home comforts. In fact, before he leaves home "full note," says Williams (op. cit.), "must be taken of the patient's inclinations, means, and, above all, of his disposition and temperament; and exile must not be decreed to those who are incapable of making themselves happy under the changed conditions of life, or all scientific grounds for a climatic decision may collapse like a house of cards."

The question of the sources of the *water supply* of a health resort is a most important one, and should always be ascertained, if possible, by physicians who give advice on the subject of change of air. More attention is now being devoted to sewage contamination on account of the many serious accidents occurring at northern watering-places within the last few years. But there are other sources of contamination, especially in southern resorts, which should receive more attention than has been accorded them. It is well known that water, contaminated by vegetable organic matter, as well as by minerals, as the salts of lime, produces dysentery and diarrhœa, but it is not so generally admitted that it may also give rise to malarious fevers. It is important that this fact should be generally recognized by those living in malarious localities, since *water* may contain the seeds of disease in winter as well as in summer. Want of space will only allow of allusion to a small number of arguments and facts which support this theory. As a general rule, people consider water which is transparent and has no unpleasant odor or taste safe. But physicians and scientists know that these are not reliable tests. All sorts of dangerous impurities may lurk in such water, while a comparatively repulsive-looking water may be wholesome to those accustomed to it, as the water of some

rivers. When water contains a great deal of organic matter, as when it permeates a rich vegetable soil, it is brown or yellow, as the waters of the Ocklawaha and St. John's rivers, and may contain as much as 15 to 30 grains to a gallon. Water from marshes may contain from 75 to 100 grains. "It is a very general belief," says Parkes (op. cit.), "among the inhabitants of marshy countries that the water can produce fever. On making some inquiries of the inhabitants of the highly malarious plains of Troy during the Crimean war, I found the villagers universally stated that those who drank marsh water had fever at all times of the year, while those who drank pure water only got fever during the late summer and autumnal months. The same belief is prevalent in the south of India, and in Western Candeisch, Canara, Balaghut, and Mysore, and in the deadly Wynaad district." "It is notorious," says Mr. Bettington, of the Madras Civil Service, "that the water produces fevers and affections of the spleen." He presents conclusive evidences of it. Parkes adduces similar evidence from various parts of France, and from what happens on ships furnished with river water."* He also states that the fevers produced by impure water are more fatal than others. It is not improbable that the malarious and malarial affections which have been so prevalent in the city of New York, in the older as well as in the newer districts, have been caused by the Croton water bringing the malarious germs from the sources of the streams; the severe droughts and very small supply of snow, characterizing the last eight or nine years, having ceased, as has already been stated, an unusual development of malarial fever, rendering many localities, which had been proverbially healthy, just the reverse.

The water of many wells in Florida is clear and sweet, and therefore regarded as perfectly suitable for drinking and cooking, but a proper examination would show it to be entirely unfit, though less so than that from the shallow wells and brooks so frequently used by the country people. It was supposed that, by boring down to or through the coral rock underlying the State, a safe drinking-water would be obtained. This water, after a

* Practical Hygiene, London, 1866, p. 56.

small amount of sulphuretted hydrogen gas has passed off, is beautiful and palatable, and far better than any well or spring water; but it gives, on chemical analysis, too large a percentage of salts and of organic matter to render it perfectly safe, though it is a very fine substitute for rain water when this can not be obtained. The latter is the only *safe* water to use in Florida, and no doubt in large portions of many of our Southern States. Rain water should always be filtered. Kedzic's filter, animal charcoal, gravel, and sand, is generally used here. But an ingenious person, who can not afford this, can make one for himself. It should be borne in mind, however, that, after a time, the filter itself may become a source of contamination, and the charcoal should occasionally be removed, opened out, and exposed to the air.*

Food—the kind and quality, and the manner of its preparation—is a matter of no small importance to an invalid; and no climate, however suitable in other respects, is proper for him if he can not obtain good and decently-cooked food. Many come to Florida with so little money that they must obtain board where the food is such that they can not eat it, or if they do, it causes dyspepsia and an aggravation of their already existing disease. In this case I usually advise them to go home. Good food can be had anywhere in the State and at reasonable rates; so can wines, medicines, and all the comforts of life, which was not the case a few years ago. Perhaps one article ought to be excepted for some localities, *milk*. But this will probably soon be obtainable in larger quantity and better quality, as cows need only to be fed with nutritious food to give good milk, whether they are in Florida or New York. The *amount* and *kind* of food, however, should be adapted to the great change of temperature to which the invalid has been subjected. This

* Palatka is supplied with large wooden cisterns, and there is an abundant supply of rain water for all purposes. The healthfulness, for which this place has always been noted, both in winter and summer, is no doubt largely due to this fact. It had, however, this reputation among our officers even during the Seminole war, and was on this account selected, in preference to posts higher up the river, for the site of a general hospital. The first purchase of a settler ought to be a cistern holding from 800 to 1,500 gallons, costing from thirty to fifty dollars.

is seldom thought of, and when nature attempts to prompt him, her hints are misunderstood, and, after a few weeks' residence, he complains of loss of appetite for his accustomed articles of food; he can not relish his usual quantity of beefsteak or roast beef twice a day; he becomes dissatisfied, and wishes a change. He should remember that less food and a different kind is required in a warm climate; less meat, and the lighter kinds, poultry, fish, eggs, vegetables, fruits. A want of observance of rules of diet induces "biliousness," dyspepsia, and perhaps diarrhœa, and as a physician is seldom consulted, except in severe cases, all this is attributed to the climate, and perhaps to malaria, and Florida has to bear the odium of this as she does of all the other imprudent acts of invalids and tourists.

A few words are necessary with regard to the *clothing* suitable for a Florida winter. It may be inferred, from what has been said with reference to variations in temperature from time to time, that a considerable variety of clothing should be at the command of the invalid. Thicker clothing is required in Florida than in New York at the same temperature. Linen clothes for invalids, at least, are seldom wanted. That which is suitable for moderate winter or early spring weather at the North will be best. One should have a thick and a thin overcoat. Flannels or merinoes should, of course, be worn at all times, and underclothes of different weight should be provided so as to be prepared for all emergencies.

Of the diseases which may be benefited by change of climate, and especially by Florida climate, only one has yet been mentioned—pulmonary consumption, because the question of change of climate arises far more frequently with reference to this than any other, and yet this powerful therapeutic agent is more successful in the cure of almost any other disease than this. It would be otherwise, however, were the cases properly selected, if the remedy were resorted to in the early stages of the disease, if the climatic change were aided, as all writers urge that it should be, by other therapeutic measures, and by judicious advice as to the mode of life suited to each particular case, and to the adopted climate.

It is notorious that large numbers are annually sent to the

South who are entirely unfit to leave home on account of the advanced state of the disease or extreme debility. By what symptoms, then, or conditions of the patient are we to be influenced in deciding the important question as to whether he should or should not leave his home? Some physicians are apparently guided by the local condition, the amount of disease existing in the lung; some by the general aspect and symptoms presented; some by both; while others, it is to be regretted, seem to be guided by no principle at all, allowing their patients to follow, to a great extent, their own inclination, to drift about according to their own caprice, or the notions of their family, or of friends who have been benefited perhaps by some particular climate which happened to suit their case. Some seem not to have the nerve, the moral courage to announce to the hopeful friends that the case is hopeless, and that it would be cruel to banish the patient from home; and thus so many distressing cases fall into the hands of those of us whose lot it is to minister to the last sufferings, mental and physical, of those whose fate it is to die away from the comforts of home and friends, and thus is the reputation of climatic treatment depreciated. A good deal of unnecessary stress is, it seems to me, laid on the fact of the disease being in the so-called "third stage" as a condition unsuited for change, especially a change to a warm, sedative climate. It has prevented many from availing themselves of the advantages of change who might have been much benefited; the third stage, or stage of softening, being often the curative means which nature adopts to get rid of dangerous deposits in the lungs. The *extent* or *condition* of the cavity, or of the *foyer purulent*, should be carefully determined. A large cavity, or one not circumscribed by a limiting membrane, or invading the lung in different directions, or accompanied by an unfavorable condition of the general health, would contraïndicate change. But the simple fact that softening has commenced, that a cavity exists, or even more than one, that the third stage has arrived, should not, *per se*, condemn a patient. All physicians who have made many autopsies, or who have dissected extensively, must have met with not a few instances of the healing of cavities in the lung, or in both lungs.

H. Bennet observed numerous instances of the healing of the cavities in the lungs of old women who died at the Salpétrière in Paris. MM. Ferrus and Cruveilhier noticed the same fact in the Salpétrière and Bicètre in the bodies of both sexes. While "M. Beau states that 157 out of 160 who died in his wards in Salpétrière had cicatrices in the apex of one or both lungs." M. Prus found similar traces. There are certain cases of phthisis which may be recognized at a glance as unsuitable for changes, whatever may be the condition of the lungs; in fact, when physical examination reveals but trifling change, as where there is excessive emaciation, a serious alteration of the composition of the blood, as indicated by a peculiar pallor, failure of digestion and nutrition, diarrhœa, hectic fever, frequent pulse, profuse expectoration, exhausting sweats, accelerated breathing, inability to exercise to any extent. It is not necessary that *all* this formidable array of symptoms should be present to warrant an unfavorable opinion on the part of the physician as regards change of climate. The most superficial examination is sufficient to enable one to judge of the future of these cases. Numbers of these invalids are, nevertheless, allowed to go, let us not say are sent, hundreds of miles from home. This is one reason why climatic treatment so often fails. Another prominent cause of failure is the advice commonly, almost universally, given by physicians to "*trust to the climate,*" to "avoid drugs and doctors." An immense number of drugs have, doubtless, already been found useless, perhaps worse than useless, and it is natural that the patient should be told to avoid them. But a remedy which, in one climate, has proved valueless, might be of decided value in another and under changed circumstances. A mere change of air and scene may, and often does, prove all that is necessary in a few cases of incipient disease; but, as a very general rule, invalids require more or less medication at one time or another during the winter. Complications, some of which may be incident to the change of climate, food, water, etc., and especially to the fatigue and excitement of the journey, require attention. Invalids are notoriously careless and reckless, and require to have some one at hand with authority to check them. All writers on climate have warned

against this proclivity to trust too much to climate. Sir James Clark says: "In the first place, I would strongly advise every person who goes abroad for the recovery of his health, whatever may be his disease, or to what climate soever he may go, to consider the change as placing him merely in a more favorable situation for the removal of his disease; in fact, to bear strictly in mind that the beneficial influence of sailing and of climate requires to be aided by such a dietetic regimen and general mode of living, and *by such remedial measures as would have been requisite in his case had he remained in his own country.* All the circumstances requiring attention from the invalid at home should be equally attended to abroad. If, in some things, greater latitude may be allowed, others will demand even a more rigid attention. It is, in truth, only by a due regard to all these circumstances that the powers of the constitution can be enabled to throw off, or even materially mitigate, in the best climate, a disease of long standing." "It was, indeed, a matter of surprise to me, during my residence abroad, to observe the manner in which many invalids seemed to lose sight of the object for which they left their own country—*the recovery of their health.*" "The more common and more injurious deviations from that system of living which an invalid ought to adopt consist in errors of diet, exposure to cold, over-fatigue, and excitement in what is called 'sight-seeing,' frequenting crowded and over-heated rooms, keeping late hours," etc.

CHEMISTRY AND PHARMACY.

"Diruit, ædificat, mutat."—Hor.

CONDUCTED BY C. W. NULL, M. D., LOUISVILLE, KY.

The Pancreatic Liquid, according to Th. Defresne, contains three distinct ferments, of which *myopsin* dissolves albumen, *amylopsin* saccharifies starch, and *steapsin* decomposes fats. The first is obtained from the pancreas of an omniverous animal, as follows: 100 grams of a filtered solution, containing 15 grams of dried pancreatic juice, are mixed with 40 grams of

acetic acid (equivalent to 7.37 grams H_2SO_4); after twenty-four hours the mixture is filtered, and the filtrate mixed with an excess of alcohol. Myopsin forms garnet-colored shining scales, which are soluble in water, the solution being coägulated by heat; it digests 104 times its weight of albumen, but does not affect starch or fat.

The other ferments are best obtained from the pancreas of ruminants; for instance, the ox, which contains no myopsin. A concentrated filtered solution of beef pancreas is mixed with sufficient alcohol to make the mixture of an alcoholic strength of 26 volumetric per cent. The precipitate collected after twenty-four hours, and washed with 26 per cent. alcohol, constitutes steapsin, which, when dry, is in translucent shining scales, which are soluble in water. It has no action on starch, but decomposes 24 times its weight of fat. It is precipitated and rendered inactive by acetic acid.

To 100 grams of the liquid of beef pancreas 15.71 grams acetic acid (equal to 2.88 grams H_2SO_4) are added; the precipitate is separated, and before the expiration of two hours the clear liquid is precipitated by 200 grams of 85 per cent. alcohol. After washing and drying, amylopsin forms lemon-yellow shining scales, which saccharify 25 times their own weight of starch, are soluble in water, the solution being precipitated by alcohol and strong acetic acid, and coägulated by heat.—*Rep. de Phar.*

How to Make Beef Tea.—Dr. Horace Hare, in experiments made in the laboratory of the University of Pennsylvania, has determined that beef boiled in the good old-fashioned way in a bottle with water gives a resulting solution which contains only about one-fourth of one per cent. of nourishing material. The beef tea thus manufactured is chiefly a solution of the salts of meat, and is therefore not nutritive, and only valuable as a stimulant to digestion. But there is another way of making beef tea which gives better results. Take a quantity of tender meat, and, after cutting off the fat, chop it up fine, put it in a bowl, pour a pint of water over it, and let it stand over night. It may possibly be well to keep the water just on a simmer; do

not raise the temperature above 140°, however, or you will coägulate all the albumen, and so either leave it on the sieve in straining, or introduce it into the stomach in the form of curds. After this simmering solution has been allowed to stand over night, pour it into a pipkin and heat it again gently with enough salt to give it flavor, and, if necessary, add a drop or two of muriatic acid. Then pour it out over a hair-sieve into a jar. The resulting solution will contain all the nutriment possible, and is the most valuable kind of stimulant.—*New Remedies.*

Popular Chemical Tests.—Some of the so-called tests for adulterations are quite amusing to one acquainted with chemistry, but unfortunately may lead astray the ignorant who trust in them. A recent newspaper item praising the lemon, and advising the eating of a whole one before breakfast, adds that lemon juice is a good test for cosmetics. "No lady should employ any cosmetic that effervesces with lemon juice." As this test merely proves the presence of carbonic acid, and thus indicates an admixture of chalk and magnesia, which are among the less objectionable face-powders, while it produces no effect upon the more dangerous zinc, lead and bismuth salts, the test is worse than useless, as giving a feeling of security to those using cosmetics which are actually poisonous.

Phloroglucin, a substance existing in various combinations in the vegetable kingdom, was discovered by Wiesner to be a very delicate reägent for ligneous tissue. One drop of a solution containing one-half per cent. of it will cause a beautiful bright red coloration on a piece of pine wood on the addition of a drop of hydrochloric acid.—*Chem. Centralbl. from Polyt. Jour.*

Antidote to Carbolic Acid.—The "Pharmaceutische Zeitung für Russland" says that on the recommendation of Prof. Baumann, Dr. Sanftleben has used sulphuric acid with the best success, the phenol combining with the acid to form phenyl-sulphuric acid, which is not poisonous. He administered it in a mixture composed of diluted sulphuric acid 10.0, mucilage of gum 200.0, and simple syrup 30.0 grammes, in doses of a tablespoonful every hour.

On the Importance of Combining Morphia with Quinia in the Treatment of Malarial Fever. — M. Lewis, M. D., believes that ten-grain doses of quinia, combined with a third or half-grain doses of morphia, will break up an attack of intermittent fever with far greater certainty than would a twenty-grain dose of quinia alone. Another advantage of the combination is the escape from the tinnitus aurium, which pretty certainly accompanies the action of larger doses of quinia given alone. The records kept by Dr. Lewis show that out of 461 cases of malarial fever 317 received quinia and morphia combined, either in powder or in aromatic sulphuric acid, while 144 were treated in other respects in the same way, with the exception that opium was omitted. The average number of chills occurring subsequent to date of attendance, in the cases treated with the combination, was 1 12-317ths while the average number in the cases treated without morphia was 3 13-144ths.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

Practical Chemistry for Medical Students. By M. M. Pattison Muir, F. R. S. E., Prœlector in Chemistry. Gonville and Caius College, Cambridge. 18mo, pp. 56. London: Macmillan & Co. 1878. Dr. Pattison Muir presents to medical students a most convenient resumé of the analysis of organic acids and inorganic substances which are used in medicine. It will be found specially useful for laboratory use and for reference.

A Text-Book of Operative Surgery and Surgical Anatomy. By Professor Claude Bernard and Ch. Huette. Illustrated by eighty-eight plates, drawn from nature, and engraved on steel. Translated from the French and edited by Arthur Trehern Norton, F. R. S. C., Surgeon to St. Mary's Hospital, London, etc. 8vo, pp. 441. Published in the United States by D. G. Brinton, 115 South Seventh Street, Philadelphia. Price, cloth,

$8.00; full leather, $9.00. The names of the authors and the reputation of the editor of this work all assure us that a valuable addition has been made to the surgical literature of the day. The illustrations are very fine, and the scope of the work embraces the whole of operative surgery. The volume is of moderate size, but will be found to contain an extraordinary amount of clearly detailed information.

Bibliotheca Medica. A Catalogue of American and British Books, Periodicals, Transactions, etc., relating to Medicine, Surgery, Dentistry, Pharmacy, Chemistry, and kindred topics, classified by subjects, with an index by authors. Cincinnati: Robert Clarke & Co. Price 25 cents. This catalogue embraces two thousand three hundred of the principal medical books printed in the English language, all of which have been classified under three hundred and eighty separate heads, with numerous cross references. The size, place of publication, date of last edition and price of each book is noted, and all necessary information is concisely given.

Antagonism of Alcohol and Diphtheria. By E. N. Chapman, A. M., M. D., formerly Professor of Materia Medica and Therapeutics and Clinical Midwifery, etc.; recently Professor of Obstetrics and the Diseases of Women and Children in the Long Island College Hospital. 16mo, pp. 98. Physicians are constantly making inquiries for short works upon the subject of diphtheria. It is believed that they will find this work of Dr. Chapman useful and suggestive. It is within the reach of all.

Transactions of the Medical Society of the State of New York for the year 1878. Truair, Smith & Bruce, Printers, Syracuse. Pp. 329. 1878.

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An Essay on Rectal Medication. By William Bodenhamer, A. M., M. D. Three illustrations, pp. 58. William Wood & Co., New York. 1878. This essay is beautifully issued, and will be found to be highly ornamental, which will perhaps compensate for its lack of usefulness.

Addresses delivered June 13, 1818, by B. L. Hovey, M. D., of Rochester, N. Y., before the Alumni, and Wm. C. Wey, M. D., of Elmira, N. Y., before the Graduating Class of the College of Medicine of the Syracuse University. 32 pages.

Annual Reports of the Supervising Surgeon-General of the Marine Hospital Service of the United States for the fiscal years 1876 and 1877. John M. Woodworth, M. D.

Minutes of the State Medical Society of Arkansas, at its third annual session, Little Rock.

Fownes' Manual of Chemistry; Theoretical and Practical; revised and corrected by Henry Watts, B. A., F. R. S. Philadelphia: Henry C. Lea. Buffalo: Theodore H. Butler. Pp. 1,627. 1878.

MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

The Cadaver-Poison of the Australian Natives.—According to Taplin, the inhabitants of the lower Murray district of Australia, who are comprised under the name of Narrinjeris, make use of a most destructive poison for killing their enemies, viz., the specific animal poison developed in human cadavers. The instrument used for inoculating an enemy with it is called *nieljeri*. The natives state that the knowledge of this poison has been communicated to them by the inhabitants along the upper Murray; and it has at present become a most destructive weapon in the hands of the natives, who adopted it with so much the more eagerness as their former belief in charms is gradually dying out among the present generation. The prac-

tice of the nieljeri is very much facilitated by the fact that the natives do not bury their dead, but preserve them above the ground. Into such a corpse the point of a spear, consisting of a sharp-pointed piece of human bone, six to eight inches long, is inserted. Then a bunch of hairs or feathers is saturated with the fat of the decomposing body, and tied about the pointed bone. This apparatus is the *nieljeri*. With it the murderer stealthily approaches his victim, slightly scratches the skin with the sharp poisoned point, and, if undetected—as it often happens in consequence of the narcotic sleep of the natives after one of their gigantic meals—he steals away unsuspected. Soon the terrible effects of the cadaveric poisoning make their appearance, and the person generally dies under the most excruciating pains.

Syphilitic Arteritis.—Dr. Paul Baumgarten (Virchow's Archiv, Band lxx, Heft 1), on the grounds of certain experimental researches into the process of obliterative arteritis, opposes the view of Friedländer and others that the new growth in the lumen of the vessel is entirely derived from the wandering cells from the vassa vasorum; he contends, on the contrary, that the epithelioid tissue swells and proliferates to form an indifferent embryonic tissue. He describes the microscopic appearances he found in a case of syphilitic inflammation of the middle cerebral artery; and while agreeing in the main with Heubner as to the facts, he denies any specific character to the growth in the lumen, which he characterizes as consisting of the ordinary indifferent tissue found in all cases of obliterative arteritis; but he admits that the affection of the outer coats presents the histological features of gumma, and so far he admits that we are justified in regarding the affection as syphilitic, although the process of obliteration takes place in the same manner and by the same means as arteritis of non-specific origin, namely, by the growth of indifferent tissue originating in the epithelioid lining.—*London Med. Record.*

Arthritis Secondary to Acute Myelitis.—The occurrence of arthritic changes secondary to chronic spinal affections is now

well established, but instances of these changes as the result of such acute affections of the cord as give rise to the sloughing of the tissues have very rarely been recorded. Such a case is described by M. Vallin in a recent number of "L'Union Med." Complete paraplegia came on in the course of two days in a healthy young man, accompanied by loss of sensibility and of power over the sphincters, death occurring at the end of two months in consequence of extensive bedsores, which had commenced on the second day of illness. The initial lesion was found to have been confined to the grey matter and posterior column. Phlyctenules had formed on the feet, and the paralyzed parts were the seat of a hard œdema extending as high as the loss of sensibility. The urine was not albuminous, and the kidneys were healthy. Effusion into both knee-joints occurred a month after the onset of the paraplegia, sufficient to elevate the patella from the condyles. After death one of these joints was found to contain about two ounces of purulent dark-colored liquid. The synovial membrane was thickened, infiltrated, and indurated, and its fringes were opaque and purulent in aspect. The cartilages were covered by flakes of pus. The inner aspects of the condyles of the tibia and femur were entirely deprived of their cartilage, and the denuded bony tissue was porous and friable. The other knee-joint only contained a quantity of lemon-colored liquid. The marrow of the bone in the vicinity of the joint most affected had undergone fatty change, and the bony tissue presented all the signs of osteitis. It is probable that cases similar to this have led to the prevalence of the opinion, which is very common among French authorities, that all acute affections of the spinal cord are "rheumatic." The arthritic changes are not uncommonly regarded as the manifestation of acute rheumatism, when they are really secondary to the nervous affection.—*London Lancet.*

The Indications for Drainage of the Knee-Joint.—Dr. J. Scriber, assistant in the Surgical Clinic at Friedburg, recommends drainage of the knee-joint instead of excision, in the following cases: 1. In acute serous inflammation, in the rare event of there being abnormal pain of sufficient severity to

affect the patient's general health. 2. In acute prevalent inflammation of the joint, as soon as there is distinct fluctuation; in the rare case of osteo-myelitis involving one or both epiphyses; in the prevalent inflammation which may complicate pyæmia, pneumonia, acute infectious diseases and phlegmonous erysipelas of the lower extremities. 3. In chronic serous inflammation of the joint. 4. In fungous granulation (*a*) where the fluid secretion in the joint exceeds the fungous granulation in amount, and where the cartilage is still intact; (*b*) where there is excess of fungous granulation, but where caries is still absent. The presence of caries is a contraïndication for drainage and an indication for excision. The earlier chronic fungous inflammation of a joint comes under treatment, the better hope there is of giving the patient a useful, movable knee-joint by means of drainage.—*Hospital Gazette and Archives of Surgery.*

MEDICAL NEWS.

'Nulla dies sine linea."

It is said that for six years, at least, no case of typhoid fever has been known to originate in the Philadelphia Almshouse, and a physician attributes the fact to the liberal use of copperas at the institution.——Dr. Joseph Kidd, the physician who was summoned from Berlin to attend Lord Beaconsfield, charged one hundred guineas a day for the period of his absence from his patients. His practice is said to be worth more than that. Some of the newspapers speak of him as a "homœopathic" physician, but the "Lancet" contradicts this statement. He does not belong to that pathy. He is a graduate of King's College, Aberdeen.——It is stated that Fort Smith, in Arkansas, 460 feet above the level of the sea, is the highest point at which the yellow fever has ever prevailed as an epidemic in this country.——The Vicksburg "Herald" says: A gallant ex-Confederate, and successful practitioner of medicine in this city, remarked to us, recently, that the present condition of

Vicksburg was worse than war. A sad truth.——The Memphis Board of Health has adopted a resolution, as follows: "That any one carrying in a public hack, to a place of interment, any yellow fever corpse, shall be fined not less than $10, nor more than $50."——Dr. Holiday, of New Orleans, says that children born in New Orleans are as liable to take the yellow fever as those born in any other State. No one, native or foreign, is acclimated until he has had an attack of yellow fever.——A New Orleans correspondent says that a strange feature brought to light by the comparative statistics of convalescent and fatal cases, was the fact that the mortality among the negroes attacked is nearly 60 per cent.; so fatal, indeed, is the disease, that when a full-blooded negro is seized he abandons hope at once.——The Navy Department has been advised, by Commander Phillips, commanding the Tuscarora, of the death of Surgeon Ed. H. Ware, at Acapulco, on the 13th inst. Orders have been sent for the Tuscarora to return to San Francisco. ——Shameful peculation has been discovered in the finances of the Minnesota State Insane Asylum by an investigating committee of State Senators. Two of its trustees made a trip to the Centennial Exhibition, at a cost to the State of $3,000, and the bills of all the Board, for services and mileage, have been equally extravagant.——Dr. Greensville Dowell, of Galveston, Texas, author of the recent treatise on yellow fever, has been in Memphis for some weeks, having volunteered his services in the epidemic there. He has charge of the Walthall Home or Infirmary, organized by Mann Walthall, of Mobile. ——Dr. Washington L. Atlee, of Philadelphia, died at his residence on Arch street, on the 6th of September.——Dr. Benjamin R. Robson, of New York city, died there recently in the ninety-third year of his age.——Dr. Julius Auerbach died the latter part of August. He was one of the most prominent physicians on Long Island, and had practiced his profession there twenty-five years.——Dr. Harwood Wakeman, of New York, was drowned while bathing in the Blue Mountain Lake, in the Adirondacks.——*Dr. Hughes, of Grenada.*—A special from Grenada, Miss., says Dr. Hughes is dead. He was the most prominent physician here, and, in fact, of all north

Mississippi. His last words were to his attendant physician, Dr. W. P. Beatty, of Mobile: "Please have me buried like a gentleman and physician." Dr. Beatty saw that it was done, laying him out and dressing his body with his own hands, and followed the corpse to its last resting place.——*Laudanum Tippling.*—The following extraordinary statement is from the "Journal of Inebriety," for September. We can scarcely credit that it is extensively done: Our attention has been called to the fact that the use of laudanum as a drink was increasing in many parts of the country. Correspondence with patients and their friends furnishes many instances where laudanum is taken at soda fountains, and over the "bar" of liquor dealers, as a daily drink. In most cases it is used with alcohol, to lessen the irritative effect of this drug, or the results of excessive abuse, as a sedative, or as a stimulant. In England a favorite preparation used after drinking is called "Pick me Up." In some large cities druggists give compounds of laudanum and ginger, under fanciful names, and these are resorted to always after, in place of, alcohol. This accounts for the enormous sales of opium, of which not over one-fifth is used in medicine.—*Med. and Surg. Rep.*

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

The Epidemic of 1878—Its Losses and its Lessons.—Just at this time both public and professional attention is absorbed by the great yellow fever epidemic, which is prevailing with unprecedented severity in several of the principal cities and towns of the South. The losses already sustained by the profession are numerous and severe. It is to be hoped and is believed that the lessons derived from this bitter experience will be valuable and permanent.

Yellow fever is not indigenous to any portion of the United States, but prevails to a certain extent during the hot weeks of almost every year in the seaport cities of our Southern coast.

In the latter part of June of the present year, the steamship Emily B. Sonder landed at New Orleans from some infected port of the West Indies. On the 12th of July the first case of yellow fever was reported at the office of the Board of Health in that city, and in the course of a few weeks the disease was declared epidemic there. Although situated well within the yellow fever zone, and the subject of severe epidemic visitations of the scourge in the past, such had been the success of the admirable and efficient sanitary measures used for several years in preventing the propagation of the disease when introduced, that the rapid spread of the disease at this time was quite a surprise to both the profession and the general public of that city. It will be remembered in this connection that during the prevalence of the epidemic of 1873 in Shreveport and Memphis, these sanitary measures sufficed to prevent the propagation of the disease in New Orleans, though the germs were almost daily imported. As a focus of yellow fever infection, it has every facility for disseminating the poison throughout the Southern States.

During the last days of July the disease appeared in Grenada, a beautiful inland town of Mississippi, with a population of 2,200. This town seems to have been in a miserable sanitary condition, and furnished a nidus for the development and propagation of the disease germs in a degree of malignity unprecedented in this country. The influence of the foul sewer, which traverses the centre of the town, upon the type of the disease as it prevailed there is evident and unmistakable.

The next place which gave lodgment to the poison was Memphis, Tenn., which seems to be (most probably in consequence of its topography and imperfect drainage) a favorite spot for the development of pestilential poisons. The disease continues to prevail there with great fatality. All the horrors of the London plague are being, as it were, reënacted in this ill-fated city. Entire families have been swept away in a few hours, and deaths occur with such rapidity that the large force of men employed is unable to bury the bodies before decomposition supervenes.

Soon after Memphis was invaded the disease became epidemic

at Vicksburg, Miss., and extended with destructive severity to Canton, Holly Springs, Greenville, Port Gibson, and Ocean Springs, in Mississippi, all being connected with the cities mentioned by rail or river. Brownsville and Grand Junction, Tenn., and Hickman, Ky., together with Baton Rouge, Morgan City, and Plaquemine, in Louisiana, have been numbered among the stricken places.

The following table will be found to contain some features of interest relating to the death-rate in the various infected places, together with certain climatic relations:

	Population.*	No. of Deaths†	Latitude.‡	Longitude.‡	Elevation.‡
New Orleans, La.....	191,418	2,368	29° 57′	90°	10 feet.
Memphis, Tenn.....	40,226	2,240	35° 08′	90°	262 feet.
Vicksburg, Miss.....	12,443	629	32° 23′	90° 56′	50 to 280 ft.
Grenada, Miss.....	2,200	271	33° 50′	89° 50′	225 feet.
Holly Springs, Miss.....	2,406	95	34° 48′	89° 28′	
Greenville, Miss.....	890	162	33° 22′	91° 04′	
Canton, Miss.....	1,963	79	32° 40′	90° 01′	
Brownsville, Tenn.....	2,457	43	35° 36′	89° 15′	
Grand Junction, Tenn....	.....	31	34° 58′	89° 12′	575 feet.
Baton Rouge, La.....	6,498	32	30° 26′	91° 18′	
Hickman, Ky.....	1,120	72	36° 33′	89° 05′	

* Gray's Atlas, 1876. † To date of September 21st, Associated Press Dispatches. ‡ Dictionary of Elevations, etc., by J. M. Toner, M. D.

At the early onset of the epidemic in the various cities, large numbers of refugees fled to other localities. Many of these have had the disease, but the above table includes the cities and towns in which the disease is epidemic.*

* Between seventy-five and eighty cases of yellow fever have occurred in Louisville from the 5th of August up to this date (September 20th), the subjects in every instance being refugees from the infected regions. The city is in excellent sanitary condition, and has escaped for the same reasons apparently which have obtained in other neighboring cities, as St. Louis, Nashville, Cincinnati, etc., viz., those local conditions essential for the development and propagation of the disease, when imported, being wanting. As in all periods of pestilential excitement, numerous self-appointed guardians of the public health have paraded their names before the public eye in the columns of the daily papers of this city. The "dear public" has been regaled with lengthy disquisitions on the history, etiology, chemistry, and pathology of epidemic diseases and numerous self-imposed interviews. The scientific attainments of these gentlemen are fully appreciated by the Profession, and it is to be hoped that their efforts for notoriety will in time be properly interpreted by the intelligent public.

It is gratifying to observe, in the midst of the havoc and distress, that the most efficient methods have been adopted by the profession for the accumulation of accurate and detailed observation, which, in time, will doubtless furnish most valuable results.

It seems reasonable to believe that the epidemic is just now at its full height, and that cessation can not be expected until a sufficient fall of temperature occurs. Still there are some lessons to be deduced at this time.

It is evident that seaport towns and large aggregations of population are no longer to be regarded as the only probable places of election for the disease. The value and efficiency of boards of health with power to enforce thorough sanitary regulations are demonstrated to the public with a force of example never before equaled in this country. Those States which are behind in possession of State and coöperative local boards of health should take warning by the present epidemic. The value of cleanliness in dwellings and streets, and the importance of free ventilation and efficient drainage as factors of public health are demonstrated with a power which is irresistible.

The losses the profession has sustained by the death of noble and worthy members are numerous and severe. Every true physician whose eye falls upon this page will be glad to know that there is no reported instance of a physician deserting his post in the hour of danger. With a heroism unsurpassed by the most brilliant military achievements, they have battled day and night with the great destroyer. When stricken down by the pestilence, others of their brethren have promptly taken the place thus made vacant. Under the rays of the hot summer sun, in the driving rain and the damp night air, sorely pressed with fatigue, with insufficient sleep and indifferent food, and often under the weight of heavy private and domestic sorrow, they have pursued the beneficent purposes of their calling.

In "the perfumed chambers of the great," in the wards with their long rows of beds, by the pallet of the pauper, the physician takes his place and discharges his duty faithfully with death all around. The military hero faces death in the midst of all

the excitement, companionship, and pageantry of war; the physician quietly in the still hours of the night, without ostentation and with the full knowledge of the dangers around him, pursues the perilous path of duty. The combat with death is so far removed from public view, and is accompanied with so little regard for self, that the great world scarcely knows of its progress. In one instance reported from Memphis, one of the profession was missed from his accustomed morning round of visits, and search being made for him, he was found dead in his room. Overworked and exhausted, he had fallen an easy victim to the disease.

We append a list of the names of those physicians who have died in the discharge of duty in the infected places up to the present time. They took their noble lives in their hands and laid them as a free-will offering upon the altar of humanity. Many of them were young, bright, and full of promise, just upon the threshold of their greatest usefulness. Their example is the heritage of their profession, and will give its members renewed courage for the daily work and duty which lies before them: Drs. Gallagher, Herndon, B. W. Avant, Woolfolk, Chas. Bonner, Catlett, T. L. Bond, Menees, J. R. Renner, John B. Hicks, Lehman, John Erskine, Cage, McGregor, Blanton, Milton, Hawkins, J. S. Bankson, W. W. Hall, Hughes, Gillespie, E. J. Hughes, May, F. Sarner, J. C. Rogers, Hopson, K Watson, W. R. Hodges, T. M. Dickinson, R. B. Williams, M. Booth, P. F. Whitehead, J. G. Byrne, Nathan McGee, J. Penn, M. J. McKee, and E. T. Easley.

A dispatch from Memphis tells us that more than twenty of our brethren in that city alone are down with the disease. It will be our sad duty to make many additions to the above roll of honor before the epidemic closes.

In contemplating the attitude of the profession toward the public at this time, can one help wondering that persons well informed in many respects utterly fail to discriminate between the true physician devoted to his calling and the pretender in search of gain; between those who go bravely to the post of danger and those who seek profit by advertising and skulking in the rear?

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. I.—*The Subject of Pterygium in its Relation to the Transplanting of the Cornea.* By JULIAN J. CHISOLM, M. D., of Baltimore, Md. [A Clinical Lecture before the Medical Class of the University of Maryland.]

Gentlemen,—The case before us is one of pterygium, growing from its usual locality on the nasal face of the eyeball, and slowly encroaching upon the face of the cornea, as is its habit. The triangular shape of this flat growth, with base at caruncula and apex upon the cornea, is the appearance which pterygium always assumes. This is a chronic trouble in the fullest meaning of the term. This woman has recognized the existence of this growth for over twenty years. Only recently has she been annoyed by frequent attacks of inflammation, and has noticed that the white head or apex of the thickened conjunctiva has approached nearer to the pupil. When a pterygium first forms, its surface usually spans the distance between the edge of the cornea and the marginal boundary of the conjunctival space. With such dimensions it may remain nearly quiescent for many years. Then with slow but steady progress it creeps onward upon the convexity of the cornea, covering a portion of this transparent surface with a fleshy membrane. After many months or years the outgrowing membrane has pushed its apex so far forward as to notch or even to cover the pupilary space. This curtain interferes very materially with vision.

Although in by very far the majority of cases this thickened

growth of conjunctival tissue is located on the inner portion of the eyeball, it is at times found on the outer surface of the horizontal line, and I have even seen it encroaching from above and below in the vertical diameter, with the base hid by the upper lid or lost in the inferior cul-de-sac. In one case that came under my observation, the cornea was invaded from all sides simultaneously. The growth had so far progressed as completely to cover the right cornea with a fleshy envelope. On the left eye the triangular forms, two in number, had not yet met over the pupil, and they still exhibited their usual characteristics.

A pterygium is a local hypertrophy of conjunctival tissue, usually induced by local irritation. A minute ulcer on the edge of the cornea is the starting point of most pterygia. Ulcers upon the face of the cornea away from the border, or those of the conjunctiva, are very seldom the originators of pterygia. It appears necessary to locate the point of chronic irritation at the very edge of the cornea, just at that line where the mucous membrane loses its connective-tissue elements in blending with the corneal surface. This portion of the eye structure shows a peculiar susceptibility to irritation. In phlyctenular ophthalmia, vesicles are scattered along this line, sometimes single, often multiplied, and most frequently at points covered by the horizontal diameter, the favorite line for pterygium developments. The nasal termination of the horizontal diameter of the cornea is the most exposed portion of the entire periphery. When foreign particles impinge upon the eyeball the perpetual winking of the lids will push them towards this horizontal line, while the continuous flow of lachrymal secretion from the temporal side of the socket washes the irritating substance in the direction of the caruncula. This physiological action may explain why the horizontal diameter of the eye, especially the inner termination, the most exposed, is the favored seat of corneal border irritations.

When the small ulcer has been established, the local irritation induces a flow of blood towards it, with vessels expanding to accommodate the influx. As many of the conjunctival vessels reach the periphery of the cornea, running in nearly straight lines, parallel with the direction of the recti muscles, so we find

with pterygia a number of vessels running from the inner angle of the eyelids to the corneal border. As this over-supply of blood would nourish to excess the connective tissue in the immediate vicinity of the enlarged blood vessels, we have in time a local thickening or hypertrophy of the mucous membrane, which forms the triangular fleshy mass we are now discussing. In the white race this growth is red and flesh-like. In the negro, as in the case presented, the mass is of a dirty brown color, discolored by pigment development. It is very common to find the entire conjunctiva in the negro of this muddy color. I have often seen this membrane as decidedly tinted as if from the long-continued use of nitrate of silver.

There is one fact to which I desire to call your especial attention, as it has very recently been utilized as an important element in the successful transplantation of the cornea. You have noticed that I can easily throw the normal conjunctival membrane into folds wherever I may seize it, as it lies over the sclerotic covering of the eyeball. When it reaches the corneal border its mobility is completely lost. Only the surface of the conjunctiva seems to continue over the face of the cornea, and is intimately blended with this transparent structure. Where this pterygium has extended, however, the thick fleshy surface, although adherent to the cornea at the same time, seems to be loosely united, so that even on the very convexity of the cornea it can be pinched upwards into a fold. I will now pass a cataract knife under the fold and dissect the entire growth away from the cornea. The operation, you see, is quite a simple one. The apex of the pterygium is now altogether loose, and with a nip of the scissors the operation of removing the growth from the eyeball is completed. Now let us examine the bleeding surface from which the fleshy growth has been removed from the cornea. This part of the cornea bleeds, an indication that it has blood-vessels carrying red blood, which it had not before the conjunctival membrane encroached upon it. Experiments have been performed to show that when the loosened conjunctiva is drawn over and covering a portion of the cornea, and allowed to remain, it will eventually adhere to this surface and form a vascular connection.

Ophthalmic surgery is very decidedly progressive in the direction of discovering methods of relief for affections heretofore deemed incurable. One of the causes of permanent blindness has of late attracted a great share of special attention. I refer to opaque cornea. An eye may be in every other respect good; iris, lens, vitreous, and retina may be all in perfect working order, but a cornea rendered opaque by surface inflammation will so mask these healthy tissues as to destroy all useful vision. It is impossible for ophthalmic science at present to make transparent such chronic white membranes. Incurable blindness is pronounced upon all unfortunates who have opaque cornea. Absorbents have been tried in them. Those ignorant of eye pathology try to cut off what they call a white skin, and soon find themselves through the whole thickness of cornea into the anterior chamber of the eye, permitting the escape of the humors. Attempts have been made to establish a central fistula through which the aqueous fluid may drain away, but by which light may enter the eye and impress the retina for useful vision. Now and then this operation has been successfully performed. The great difficulty resides in keeping the fistula open. It will, as a rule, close up in spite of all efforts to prevent it.

In recent times, since skin and mucous membrane grafting have been so successfully practiced, attempts have been made to transplant the clear cornea of an animal into the sclerotic of a man, from whose eyes an opaque cornea had just been removed. However carefully these experiments have been carried out, using a trephine for the healthy as well as diseased cornea, so as to make the small clear plug from the eye of the animal fit accurately into the round central hole in the opaque cornea, from which a duplicate piece had been removed, no very satisfactory results have been secured. The normal nutrition of the cornea does not seem adapted to the nourishing of a transparent corneal graft, and the transplanted piece perishes.

During the last few months a solution to this very important surgical problem has apparently been reached in the vascularization of the corneal graft, and also of the foundation which is to receive it. To secure these conditions, the pathology of ptery-

gia has been pressed into service. The corneal surface becomes vascular under a pterygium, which is an overgrowing of modified conjunctival tissue. Make an artificial pterygium by causing the conjunctiva to encroach upon the entire periphery of the cornea, leaving out only a small transparent portion of the centre. When this abnormal state is fully established, it converts the vitalized graft fit for transplanting. In this direction success has finally been obtained as the fruit of surgical ingenuity.

The preparation for a successful planting is begun simultaneously upon the diseased human eye and the healthy eye of a dog or rabbit. In each case the conjunctiva is separated from the entire periphery of the cornea by careful dissection, using a fine pair of scissors for the purpose. By means of a delicately-curved surgeon's needle, a fine thread can be made to encircle the cut-up conjunctiva in the way that a thread would be run around the mouth of a bag to make a puckering string. Carefully draw the ends of the thread as in the making of a knot, and the conjunctival free edge begins to pucker. In doing so it overlaps the outer edge of the cornea. Continue to draw upon the thread until the loose conjunctiva is so advanced that fully three-fourths of the transparent surface of the cornea becomes covered, leaving only a peep-hole, as it were, in the centre of the eye. In the course of time the conjunctiva will become adherent to the underlying cornea, and will supply it with blood-vessels. To hasten and insure this adhesion, it may be necessary as a preparatory step to remove the epithelial surface of the corneal zone by scraping or by the use of some cauterizing agent. When the eye of the animal, as well as the opaque cornea of the human subject, is by this process three-quarters covered over with an adherent vascular membrane, the material is ready for use. The operation for the transfer of the animal cornea can now be undertaken.

The patient being under the influence of some anæsthetic, an incision is made through the thickness of conjunctiva at the original border of the corneo-scleral junction, which line will necessarily be at some distance from its recently advanced termination. This conjunctival incision encircles the eyeball.

From this incision carefully dissect up the base of the acquired pterygium, freeing it from the corneal surface until the small inner round portion of the naked opaque cornea is reached. At this point transfix the entire thickness of cornea, enter the anterior chamber, and cut out the entire ring of opaque cornea which closes in the very front of the eyeball. The human eye will now exhibit a small round hole in its anterior axis, surrounded by a broad zone of bleeding corneal surface, from which the adherent conjunctiva had been dissected. If the animal had not been previously chloroformed, it should now be killed, and immediately the *whole cornea through its entire extent and thickness* should be speedily cut out. This piece is laid upon the finger of an assistant so as to keep it warm. The surgeon, with care and dispatch, dissects up the advanced and adherent mucous membrane from the corneal substance until the immediate neighborhood of the clear corneal arena is approached. Then all the underlying cornea is removed. We now have from the animal a graft of clear healthy cornea of normal thickness, to which a broad zone of vascular conjunctiva is connected. In such case the cornea has been split into its mucous covering and proper substance. In the human subject the proper vascular corneal zone has been left, having a hole in its middle. In the animal graft the mucous membrane has been left with central corneal attachment, all of the vascularized corneal substance having been cut away. Now adjust this clear corneal plug from the animal into the hole in the human cornea made to receive it, and carefully spread out the zone of adherent conjunctiva so as to make it cover completely the raw surface of human cornea from which the pterygium had been dissected. Where the edges of the mucous graft come in contact with the bleeding edges of the human conjunctiva, put points of suture to insure the proper adjustment of the edges. The closed lids and the usual cottton pad with compress bandage will keep the raw surfaces intimately together until union is thoroughly effected. The new mucous flap will soon take root, vessels will rapidly push into it from the approximate edges, and also from the lower vascular surface. In this manner will the nourishment of the corneal plug be assured.

Such is the new bull's eye which will hereafter be inserted into useless opaque cornea, and with the promise of giving useful vision to a very large number of blind persons. By this new operation, ophthalmic surgery will offer a great boon to the afflicted.

ART. II.—*Note on Marsh Miasm—(Limnophysalis Hyalina).* By ABR. FREDRIK EKLUND, M. D., Stockholm, Sweden, Physician of the First Class in the Swedish Royal Navy. [Translated from the "Archives de la Médicine Navale," Vol. XXX, No. 7, July, 1878. By A. SIBLEY CAMPBELL, M. D., Augusta, Georgia.*

Before giving a succinct account of the discovery of paludal miasm and of its natural history, I ought in the first place to state that I have not had the opportunity of reading or studying the large original treatise of Professor Salisbury. I am acquainted with it only through a résumé published in the "American Journal of the Medical Sciences" for the year 1866, New Series, Vol. LI, p. 51. At the beginning of my investigations, I was engaged in a microscopic examination of the water and mud of swampy shores and of the marshes, also with a comparison of their microphytes with those which might exist in the urine of patients affected with intermittent fevers. Nearly three months passed without my being able to find the least agreement, the least connection. Having lost nearly all hope of being able to attain the end which I had proposed, I took some of the slime from the marshes and from the masses of kelp and confervæ from the sea shores, where intermittent fevers are endemic, and placed them in saucers under the ordinary glass desiccators exposed on a balcony, open for twenty-four hours, the most of the time under the action of the burning rays of the sun. With the evaporated water deposited within the desiccators, I proceeded to an examination, drop by

* The translation has been made from a reprint from the "Archives of Naval Medicine, for a copy of which in pamphlet form I am indebted to my learned friend, the author.—A. S. C.

drop. I at length found that which I had sought so long, but always in vain. The parasite of intermittent fevers, which I have termed *limnophysalis hyalina*, and which has been observed before me by Drs. J. Lemaire and Gratiolet ("Comptes Rendus Hebdomadaires de l'Académie des Sciences," Paris, 1867, p. 317, et 318) and B. Cauvet ("Achives de Médicine Navale," Novembre, 1876), is a fungus which is developed directly from the mycelium, each individual of which possesses one or several filaments which are simple or dichotomous, with double outlines, extremely fine, plainly marked, hyaline and pointed. Under favorable conditions, that is, with moisture, heat and the presence of vegetable matter in decomposition, the filaments of mycelium increase in length. From these long filaments springs the fungus. The sporangia, or more exactly the conidia, are composed of unilocular vesicles, perfectly colorless and transparent, which generally arise from one or both sides of the filaments of the mycelium, beginning as from little buds or eyes; very often several (2–3) sporangia occur placed one upon the other, at least on one side of the mycelium.

With a linear magnitude of 480, the sporangia have a transverse diameter of one to five millimetres, or a little more in the larger specimens. The filaments of mycelium, under the same magnitude, appear exceedingly thin and finer than a hair. The shape of the conidia, though presenting some varieties, is notwithstanding always perfectly characteristic. Sometimes they resemble in appearance the segments of a semicircle more or less great, sometimes the wings of butterflies double or single. It is only exceptionally that their form is so irregular. Again, when young they are perfectly colorless and transparent; sometimes they are of a beautiful violet or blue color (*mykianthinin—mykocyanin*). Upon this variety of the *limnophysalis hyalina* depends the vomiting of blue matters observed by Dr. John Sullivan at Havana, in patients affected with pernicious intermittent fever (algid and comatose form). In the perfectly mature sporangia, the sporidia have a dark brown color (*mykophœin*). From these sporidia, the Italian physicians, Lanzi and Perrigi—in the course of their attempts at its cultivation—have seen produced the *monilia penicinata friesii*, which is,

consequently, the second generation of the *limnophysalis hyalina*, in which alternate generation takes place, admitting that their observations may be verified. The sporangia are never spherical, but always flat. When they are perfectly developed they are distinctly separated from their filament of mycelium by a septum, that is to say, by limiting lines plainly marked. It is not rare however to see the individual sporangia perfectly isolated and disembarrassed of their filament of mycelium floating in the water. It seems to me very probable that these isolated sporangia are identical with the hyaline coägula so accurately described by Frerichs, who has observed them in the blood of patients dying of intermittent fevers. But if two sporangia are observed with their bases coherent without intermediary filaments of mycelium, it seems to me probable that the reproduction has taken place through the union, which happens in the following manner: Two filaments of mycelium become juxtaposed; after which the filaments of mycelium disappear in the sporangia newly formed, which, by this same metamorphosis, are deprived of the faculty of reproducing themselves through the filaments of mycelium of which they are deprived. The smallest portion of a filament of mycelium evidently possesses the faculty of producing the new individuals.

It is unquestionable that the *limnophysalis hyalina* enters into the blood either by the bronchial mucous membrane, by the surface of the pulmonary vesicles, or by the mucous membrane of the intestinal canal; most often, no doubt, by the last, with the ingested water; this introduction is aided by the force of suction and pressure, which facilitates their absorption. It develops in the glands of Lieberkühn, and multiplies itself; after which the individuals, as soon as they are formed, are drawn out and carried away in the blood of the circulation.

The *limnophysalis hyalina* is, in short, a solid body, of an extreme levity, and endowed with a most delicate organization. It is not a miasm in the common signification of the term; it does not carry with it any poison; it is not vegetable matter in decomposition, but it flourishes by preference amid the last.

In regard to other circumstances relative to the presence of this fungus, there are above all two remarkable facts, namely,

its property of adhering to surfaces as perfectly polished as that of a mirror, and its power of resistance against the reägents, if we except the caustic alkalies and the concentrated mineral acids. This power of resisting the ordinary reägents explains in a plausible manner why the fungus is not destroyed by the digestive process in the stomach, where, however, the acid reäction of the gastric juice probably arrests its development—as that of the schistomycètes in general—and keeps it in a state of temporary inactivity.

This property of adhering to smooth surfaces explains perhaps the power of the *eucalyptus globulus* in arresting the progress of paludal miasm (?). But it is evident that other trees, shrubs, and plants of resinous or balsamic foliage—as, for example, the *populus balsamifera*, *cannabis sativa*, *pinus silvestris*, *pinus abies*, *juniperus communis*—have equally, with us, the same faculty; they are favorable also for the drying of the soil, and the more completely, as their roots are spreading, more extended, and more ramified.

In order to demonstrate the presence of the *limnophysalis* in the blood of patients affected with intermittent fever during the febrile stage, properly speaking, it appeared necessary for me to dilute the blood with a solution of nitrate of potassa, having at 37.5° C. the same specific gravity as the serum of the blood. With capillary tubes of glass, a little dilated towards the middle, of the same shape and size as those which are used in collecting vaccine lymph, I took up a little of the solution of nitrate of potassa above indicated. After this I introduced the point of an ordinary inoculating needle under the skin, especially in the splenic region, where I ruptured some of the smallest blood-vessels of the subcutaneous cellular tissue. I collected some of the blood which flowed out or was forced out by pressure, in the capillary tubes above described, containing a solution of nitrate of potassa; after which I melted the ends with the flame of a candle. With all the intermittent fever patients whose blood I have collected and diluted during the febrile stage, properly speaking, I have constantly succeeded in finding the *limnophysalis hyalina* in the blood by microscopic examination.

It is only necessary for me to mention here that it is of the highest importance to be able to demonstrate the presence of the fungus in the blood of the circulation and in the urine of patients in whom the diagnosis is doubtful. The presence of the *limnophysalis hyalina* in the urine indicates that the patient is liable to a relapse, and that his intermittent fever is not cured, which is important in a prognostic and therapeutic point of view.

When the question is to prevent the propagation of intermittent fevers, it is evident that it should be remembered that the *limnophysalis hyalina* enters into the blood by the mucous membrane of the organs of respiration, of digestion, and the surface of the pulmonary vesicles. We have also to consider the soil, and the water which is used for drinking. In regard to the soil, several circumstances are very worthy of attention. It is desirable, not only to lower as much as possible the level of the subterranean water (*grunawassen*) by pipes of deep drainage, the cleansing, and if there is reason, the enlargement (J. Ory) of the capacity of the water collectors—besides, covering and keeping in perfect repair the principal ditches in all the secondary valleys to render the lands wholesome—but also to completely drain the ground, diverting the rain-water and cultivating the land, in the cultivation of which those trees, shrubs, and plants should be selected which thrive the least on marshy grounds and on the shores and paludal coasts of the sea, and which have their roots most spreading and most ramified. Some of the ordinary grasses are also quite appropriate, but crops of the cereals, which are obtained after suitable reformation of marshy lands, yield a much better return. After the soil in the neighborhood of the dwellings has been drained and cultivated with care and in a more systematic manner than at present, the bottoms of the cellars should be purified as well as the foundations of the walls and of the houses.

The water intended for drinking, which contains the *limnophysalis hyalina*, should be freed from the fungus by a vigorous filtration. But, as it is known, the filtering-beds of the basins in the water conduits are soon covered with a thick coating of confervæ, and the *limnophysalis hyalina* then extends

from the deepest portions of the filtering-beds into the filtered water subjacent. It is for this reason that it is absolutely necessary to renew so often the filtering-beds of the water conduits, and, at all events, before they have become coated with a thick layer of confervæ. The disappearance of intermittent fevers will testify to the utility of these measures. It is for a similar reason that wooden barrels are so injurious for equipages. When the wood has begun to decay by the contact of the impure water, the filaments of mycelium of the *limnophysalis hyalina* penetrate into the decayed wood, which becomes a fertile soil for the intermittent fever fungi.

The employment for the preparation of mortar of water not filtered, or of foul, muddy sand which contains the *limnophysalis hyalina*, explains how intermittent fevers may proceed from the walls of houses. This arises also from the pasting of wall-paper with flour-paste prepared with water which contains an abundance of the fungi of intermittent fever. The miasm in the latter case is therefore *endoecic*, or more exactly *entoichic*. With us the propagation of intermittent fever has been observed in persons occupying rooms scoured with unfiltered water containing the *limnophysalis hyalina* in great quantity.

The following imperial ordinance was published on the 25th of March, 1877, by the Chief of Almiralty of the German Marine. It has for its object the prevention and eradication of infectious diseases:

"In those places where infectious diseases, according to experience, are prevalent and unusually severe and frequent, it is necessary to abstain as much as possible from the employment of water taken from without the ship for cleansing the said vessel, and also for washing out the hold, when the water of the sea or of a river, in the judgment of the commander of a vessel, confirmed by the statement of the physician, is shown to be surcharged with organic matter liable to putrefaction. With this end in view, if you are unable to send elsewhere for suitable water, you must make use of good and fresh water, but with the greatest economy. In that event the purification of the hold must be accomplished by mechanical means or by disinfectants."

As I have demonstrated by my investigations that in the distillation of paludal water, and that from the marshy shores of the sea, the *limnophysalis hyalina*, which is impalpable, is carried away and may be detected again after the distillation, it must be insisted that the water intended to be used for drinking on shipboard shall be carefully filtered before and after its distillation.

ART. III.—*On the Medical Virtues of the Waters of the "Bedford Alum and Iron Springs," Va., in the Treatment of Scrofulous Diseases.* By R. RANDOLPH STEVENSON, M. D., Farmville, Va.

Without attempting to enter into a discussion as to the pathology of scrofula and its kindred affections, I will briefly remark that, so far as my experience extends, I have been much disappointed in the therapeutical effects of many of the remedies that have been extolled from time to time by eminent medical men for the relief and cure of a disease that, in some form or other, destroys more lives than any other disease in civilized life.

If we take it for granted that scrofula is a disease caused by defective nutrition and coupled with a morbid and weakened condition of the constituent elements of the blood, it must be admitted that in order to correct this, certain hygienic, dietetic and remedial measures must be adopted if we expect to accomplish a cure. According to Berzelius, the blood of man is the richest of all the mammalia, containing three times as many hydrochlorates as the blood of the ox. The blood is not only the source of all the elements of structure; it not only furnishes the materials for all the secretions and excretions, and for all chemical changes, but is in turn affected by the physical and chemical changes of every vessel, of every nerve, of every organ and texture of the body. It is evident then that the constitution of the blood will depend upon the food, upon the vigor and perfection of the organs of digestion, respiration, circulation, secretion, and excretion, and upon the correlation of the physi-

cal, vital and nervous forces. Then to supply the nutritive and plastic material of the blood in a person of a scrofulous diathesis, there must be, in the process of assimilation and nutrition, some compound which will readily enter into the secretory and excretory organs, so as to neutralize the morbid product of the blood in its circulation into the lungs, the glandular system, and into every part of the body. This can not be done by medicines alone, such as iodine, iodide of potassium, cod-liver oil, stimulants, etc., but there must be a combination of wholesome, nutritious diet and pure air, as well as medicines that are in effect depuratory, deobstruent, alterative, discutient, etc. To fulfill the latter indications, I was led to believe, from seeing an analysis of the waters of the Bedford (Va.) Alum and Iron Springs, that much benefit might be expected from the judicious use of these waters in scrofulous and uterine diseases. I therefore selected two cases in my practice as best suited to give these waters a fair test. They are as follows:

Case I.—June, 1874. Mr. J. C.; occupation carpenter; aged twenty-nine years; parents of marked strumous diathesis. He says that symptoms of scrofula appeared in the cervical regions some two years before he consulted me, but had given him no serious apprehension until it made its appearance in the clavicular and axillary region, and at the same time deviating from the glandular and lymphatic system and attacking the right arm and buttock, literally destroying a great portion of the deltoideus and gluteus muscles. Exhaustive suppuration with slight hectic fever had produced great emaciation and debility. He had taken the usual remedies, such as cod liver oil, iodide of potassium, etc., without benefit. I placed him on full, nutritious diet, with an occasional dose of quinine, and directed him to use freely of the Bedford Alum and Iron Mass, both internally and as a local application. Suffice it to say, without going into the details of the case from day to day, that at the end of six months from the time that I placed him under treatment, almost every vestige of the disease had disappeared, leaving many large cavernous cicatrices, some of them adherent to the bone, evidently showing that the periosteum, as well as the muscular and glandular system, was involved in the disease.

CASE II.—Miss M. C., aged eighteen years; delicate physique; light hair and eyes; parents healthy. This patient I found suffering with scrofula, involving the submaxillary and cervical glands. She had at the same time a persistent cough with bronchial expectoration and an occasional hæmoptysis; menstruation at times very irregular. Her mother informed me that she had been under treatment some two years, taking stimulants, cod liver oil, iron, iodine, etc., with no improvement in her symptoms. I ordered her to be placed on a full, nutritious diet, and to use freely of the waters of the Bedford Alum and Iron Springs; at the same time I advised a strong solution of the mass from the same springs to be applied to the discharging ulcers. For the cough I prescribed syrup of wild cherry tree bark, and for debility and loss of appetite an occasional dose of quinine. Under this treatment she continued to improve, and at the end of the eighth month her menstrual functions were regular, her cough had ceased, and the sores about the neck and breast had all healed. She now presents the appearance of a young lady in perfect health.

I consider the result of these cases (which presented all the characteristics of scrofula in its worst form) as a fair test that the waters of these springs are entitled to great consideration by the medical profession at large for their efficacy in the treatment of this most formidable malady; and now particularly would I urge the importance of their value, as I have at this time several patients under the same treatment for scrofulous and uterine affections, and they are all progressing favorably, and I expect to discharge them cured in a short length of time.

Unguentum Petrolei.—This is the name now given to the petroleum derivative formerly called cosmoline. We have made extensive use of this substance, and find it the very ideal of an oleiform substance, beautiful in color, neutral in reäction, unchangeable through exposure, perfectly bland, soothing to the most sensitive surface, and of agreeable odor.

ECLECTIC DEPARTMENT.

"Carpere et colligere."

ART. I.—*Nervous and Muscular Disorders in Chronic Alcoholism—A Clinical Lecture delivered in Bellevue Hospital.* By WM. H. THOMPSON, M. D., Professor of Therapeutics and Materia Medica in the Medical Department of the University of the City of New York.

Gentlemen,—The cases which we present to you to-day illustrate a number of facts in connection with the production of nervous and muscular disorders in chronic alcoholism. This is quite a different morbid condition from acute alcoholism, for not only may its worst results be found in patients who never once in their lives had an attack of delirium tremens, or even been thoroughly intoxicated at any one time, but the lesions accompanying each respectively may contrast as widely as the lesions of an acute pneumonia contrast with those of fibroid phthisis.

Now, when the symptoms present are of a nervous character, they often resemble so closely the symptoms of certain specific nervous diseases that it is easy to be misled both as to the nature and the treatment of the case. As alcohol may occasion irritation or inflammation of the meninges almost anywhere in the skull or along the spinal canal, or interstitial and perivascular changes within the nervous pulp itself, therefore there can scarcely be any form of nervous disease, mental, motor, or sensor, which its effects will not simulate in the symptoms produced. There is this practical point, however, to be borne in mind, that in the majority of cases nervous disorders caused by alcohol alone are curable. The prognosis is good compared with the same class of affections due to other causes, provided you find out in time that it is alcohol which is working the mischief, and can stop it. Now, here in the hospital we can bluntly ask the patients how long and how much they have been drinking; and if they claim to have been temperate, we can easily tell them that we do not believe it. But in private practice the inclination, of beginners at least, is to fall in with the most favorable estimate of their patients, and to accept their statements readily, so that on this account the true cause of many obscure disorders is frequently overlooked. Longer experience will show you that chronic drinkers are characteristically deceitful in their statements about

either the quantity or the kind of their beverages, and, moreover, that one of the most mischievous kinds of drinking, that of constant tippling, may be carried on for years without the patient seeming either to others or to himself as a drunkard. To enable you, therefore, to recognize and test the influence of alcohol in the production of a particular nervous disorder, i. e., loss of vision, paraplegia, etc., it is well to bear in mind some symptoms of chronic alcoholism which you may note for yourself or elicit from your patient without his knowing what you are about.

You may begin with an observant hand-shaking. The hand of a drinker is often, *sui generis*, large, fat, pulpy, with little or no grip, and in distinction from a dropsical hand often hot; differing also from ordinary œdema in that the swelling is on the palmar rather than on the dorsal aspect. The appearance of the hand is also peculiar. The fingers are thickened throughout, without the depressions below the phalangeal articulations, and if a ring is worn, it tightly constricts the finger. Even in those drinkers who are emaciated by alcohol, the hand, though thin also, is yet characteristically flabby and weak.

The movements of the voluntary muscles in general present likewise characteristic features. One of the first and ever afterwards constant effects of the habitual use of alcohol is the development of slowness in muscular action. It requires a considerable exertion of the will to cause muscles, long alcoholized, to resemble their former selves. They act not so much like tired or wearied muscles, but like lazy ones, the indications being not that they are specially weakened or paralyzed, but rather that some great inertia has to be overcome; so that, for instance, a man takes double the time that he ought to rise from his chair. Real activity of any kind is incompatible with chronic drinking, and hence such persons are notoriously procrastinating and unreliable. But as the case progresses true weakening develops, changing the symptoms from those of mere sluggishness into the general debility characteristic, not of any definite nervous disorder, but rather of old age. We might indeed correctly say that alcohol can induce old age as a disease, for in more than one case natural changes become diseases simply by occurring too soon. You have excellent illustrations of this fact if you note the gait of these middle-aged patients before you. Their walk is neither ataxic nor paraplegic. A true paraplegic gait is shuffling, while the ataxic patient brings his heels down first and forcibly on the

floor. But these men, who are none of them, I suppose, much beyond what is termed the prime of life, yet walk with an instinctive watch against stumbling, showing that carefulness in progression which belongs naturally to advanced age alone. But the reason is that these patients are positively afraid of falling, not because they are under the present influence of liquor (for that idea reflects too seriously on this institution), but because, with most cases of advanced chronic alcoholism, a sudden sensation of imminent danger of falling is a very frequent occurrence. This feeling is so peculiar, and at the same time its subjects are so unacquainted with its origin, that you can often detect the secret drinker by asking him if he is troubled with this particular symptom, which differs from true vertigo in being usually described as not accompanied by swimming or reeling, but rather as a sudden, startling fear of dropping to the ground.

To complete the external signs, whose significance you should take account of, whatever the patient may say, you will note a relaxed, congested uvula accompanying a chronic pharyngeal catarrh, ascribed by the patient very commonly to some "dropping down from the head" into the throat. In many cases this state of the fauces involves the laryngeal structures enough to produce a frequent husky cough without any but slight viscid expectoration. The conjunctivæ, if not congested, yet often have small beads of fat near the inner angle of the eye. The skin is soft and flabby, and on the abdomen of preternatural whiteness, where it can be easily pinched up into folds, which are restored but slowly, owing to loss of normal elasticity. In the majority of instances, owing to gastric catarrh, the epigastrium is puffed out, and very often tender on pressure. But the most noteworthy change apparent on inspection is the increase of the curve of the abdomen below the umbilicus, best distinguished in thin persons, and due to a tendency in the intestines to sink down into the pelvis. This is one of the earliest symptoms of failing vitality, whether from age or otherwise, and is specially frequent in chronic drinkers. Sir James Paget speaks of these appearances of the skin and of the shape of the abdomen as rendering the prognosis unfavorable for surgical operations, owing to the liability of such persons to succumb quickly to shock.

You may now lead your patient to think that you know his disease very well by suggesting that he is a bad sleeper; that going to sleep easily he is awakened too soon by disagreeable

dreams, and then finds it difficult to sleep again. Disturbed slumber and an invariably unpleasant kind of dreaming is so common among these patients that it is frequently their reason for first consulting you. In quite chronic cases you may also suggest that on dropping asleep they are prone to startings of the limbs, for in many instances this is so constant as to be very annoying, and like the analogous startings of epileptics, whose disease has followed blows on or injuries to the skull, may be quite indicative of cerebro-meningeal irritation, though it may also occur in cases of simple weakness of the spinal centres.

Chronic drinkers never have good appetites. The most certain of all antidotes, or rather I should say the true opposite to alcohol, is food. In acute alcoholism there is no remedy which will compare in the treatment of delirium tremens with constant regulated doses of milk and lime-water. Nearly all cases of this affection are preceded by a total abstinence from food, sometimes for days together. On the other hand, they suffer the least, among those who habitually use stimulants, who take them only with their meals, because alcohol and its antidote are then taken together. I doubt if any one is likely to become a drunkard if he never drinks except at meals, for generally the craving for drink may itself be stopped for some hours by taking food alone. As alcohol is indulged in, however, between meal hours, the sense of hunger grows weaker and weaker, and soon it is found that what seemed a fair appetite at the beginning of a meal does not last long enough to finish it, especially in the case of hearty animal food. The breakfasts are particularly troublesome to dispose of, and hence the popularity of morning bitters to stimulate the appetite; but generally these after a while lead to positive morning nausea and vomiting. The small amount of food which many votaries of Bacchus get along with is often as surprising as the starvation diet of some cases of hysteria. You may finally tell your patient that you suppose his bowel passages are generally scanty, whether they be loose or constipated.

It would be wholly impracticable for us in the limits of this lecture to dwell in detail upon the varied nervous disorders which accompany the degenerative changes in nerves and nerve centres caused by alcoholism. Symptoms resembling chronic myelitis or chronic spinal meningitis you will have repeatedly. I think that thirty per cent. of the cases of paraplegia in adults, when not syphilitic, is due to chronic alcoholism. Epilepsy is very com-

mon, and alcoholic insanity leads the list of mental disorders in this country in the frequency of its occurrence and in the variety of its forms. Weakness of sight, and less often of hearing, but in either case exactly resembling failure from age, are likewise common. Muscular tremors resembling paralysis agitans are familiar to you all, and occasionally true ataxic symptoms are also present; but the alcoholic varieties of both of these diseases are chiefly distinguished by their affecting both sides of the body equally from the first. Why you should meet with such an array of nervous disorders, as well as many obscure and anomalous cases which you can not refer to any particular class, is readily explained by the anatomical changes that are often found in the nerve-structures of the victims of alcohol. Instead of softening of the brain (which much talked-of disease almost never occurs except in very limited areas), you find extensive destruction of nerve-cells and fibres by the encroachment of connective tissue, producing such an atrophic hardening that Van der Kolk claimed he could tell, when blindfolded, the brain of a drunkard by the sense of touch alone.

But, as I remarked before, I have seen apparently the gravest symptoms of nervous disease gradually improve; and recovery, in great measure at least, take place, though sometimes not for many months, in the persons of old drinkers who had abandoned alcohol, when if their symptoms had been due to other morbid processes, such improvement would have been scarcely possible. It is true that we can never tell ante-mortem to what extent the nervous tissues have been damaged by this poison, and of course I do not mean to intimate that portions of nervous tissue may not be often as irretrievably cirrhosed by alcohol as liver or kidney tissues so frequently are. But, nevertheless, whether owing to a greater degree of reparative power on the part of nervous tissue, or to a less amount of direct irritation by alcohol than occurs in the case of the liver or kidney, I feel assured that lost nerve-function can be oftener restored in these patients than would seem probable, when we consider the organic changes which may be present. The first requisite for this happy result of course is to take no more alcohol. There is no use talking any further on this point. If the patient will not stop that, then let him go on to universal sclerosis. But we may materially aid the restoration, especially when mental as well as spinal functions are affected, by the persevering use of small doses of corrosive sublimate, in con-

junction with the nerve restoratives, cod-liver oil and phosphorus; for I have no question whatever that mercury exerts a postive remedial effect upon sclerotic forms of degeneration. Nitrate of silver in one-quarter grain doses, with the same of extract belladonna, should be used as long as prudent, and then the oxide of zinc may be substituted for the silver, in three grain doses t. i. d., with better success than zinc shows in the treatment of any other nervous disease, its benefit in alcoholic muscular tremors being quite unmistakable.

In conclusion, we may remark that there is one practical point to note as respects the great wasting of the voluntary muscles in chronic alcoholism. You can readily see that in every one of the patients before you the muscles of the arms scarcely rise in their beds with the most forcible contraction. Part of this atrophy may be simply an expression of the starvation of all the tissues from lack of food, which, as we have remarked, such patients have little relish for, partly to their damaged stomachs and livers, and partly also to chronic self-poisoning from damaged excreting glands. But still, the general characters of the wasting so closely resemble the atrophy of muscles which occurs in certain nervous diseases, that the affection must, I think, be regarded as mainly secondary to the changes in the nervous system. You find in them an analogous condition to the disease called progressive muscular atrophy, where perfectly healthy bundles of muscular fibres run side by side with others in all stages of degeneration. Hence the restoration of muscles from alcoholic degeneration is very slow, and does not begin until some time after the disappearance of the nervous symptoms. This you should explain to your patients in order to prevent them from having resort to gymnastic exercises, rowing, and other forms of active muscular exertion commonly recommended for improving muscular power. You might as well recommend aged people to bring back the strong arm of youth by Indian clubs. The alcoholic tremor is greatly aggravated by the slightest over-taxation of the weakened muscles, and hence it is not safe to allow of any severe exertion until after the symptoms of nervous disorder have quite disappeared.

ART. II.—*Clinical Lecture on Prostatorrhœa and Stricture of the Urethra.* By SAMUEL W. GROSS, M. D., Lecturer on Diseases of the Genito-Urinary Apparatus in Jefferson Medical College. [Delivered at Jefferson Medical College Hospital.]

This patient is a married man, and is twenty-seven years of age. Ten years ago he had a very bad attack of gonorrhœa, which lasted three years; a chronic gleet being established. Lately the man has been married. He comes to us to-day complaining of dribbling of the last few drops of urine, so that he always has to give his penis a good shake before putting it away; of a thick muco-purulent discharge from the urethra when he has to strain at stool; of almost constant priapism; of constipation; great nervousness; occasional palpitation of the heart; a scalding sensation when he passes water, and general sexual debility. He is working at present in a turpentine manufactory, and thinks that his sexual passions have been greatly increased since he has been there. This is very easily explained by the fact that the turpentine makes the urine preternaturally acrid, and so increases the sensibility of the parts by setting up a constant source of irritation. Before his change in trade he was in the habit of making water frequently; now he only does so two or three times during the day, and then in large quantities.

I propose to-day to examine the man in your presence, and see what is the matter with him. The discharge of the thickish white fluid from the urethra while straining at stool is a characteristic symptom. The man says that this discharge comes out in lumps, or squirts out. After the passage of the urine, he says that he very often has a feeling like that present during erection, only that it is not nearly so pleasant.

I shall introduce this No. 30 bulbous bougie, and see if I can discover any strictures. The meatus is an unusually large one. I find that the patient has a number of strictures, one about an inch behind the meatus, and two stricture-bands in the region of the bulb. I can not carry my investigations any further to-day, for this one introduction of the instrument has caused a great deal of pain, showing a state of considerable hyperæsthe-

sia of the urethra, and has made the man feel quite sick at the stomach and faint for the time being. In England the surgeons introduce the catheter frequently with the patient standing upright before them, and it is not by any means unusual for patients to fall down in a fainting fit after the passage of the instrument. Sometimes, when patients come to my office, I introduce the catheter while they are sitting down, and in several instances they have fallen off their chairs in a fainting condition. This is, of course, the result of some peculiar idiosyncrasy on the part of the patient. Indeed, so close is the relation between the mucous membrane of the urethra and the general vaso-motor system that an unwary introduction of the catheter or sound has, in some rare instances, produced epilepsy, and even death.

The man says that he has not had so much discharge within the past month. The bougie has, as you can all see, brought away with it some of this discharge, which evidently comes from the neighborhood of the prostate. The numerous strictures are plainly a result of the gleet, or rather of the long-standing gonorrhœa. I have no doubt that if I could slit up this man's urethra I should find throughout its length well-marked linear injection. The tenderness in the region of the prostate, as developed by the bulbous bougie, is very marked. This local inflammation is due to chronic catarrh of the prostate gland, which means an exaggerated, chronic secretion by the prostatic ducts. We call this condition prostatorrhœa, or abnormal flow of the prostatic fluid. Prostatorrhœa was first described as an independent disease by Prof. S. D. Gross some twenty years ago.

Prostatorrhœa is usually induced in young men by ungratified sexual passion, and consists in a gleety discharge from the prostate gland. It is also produced by excessive indulgence or masturbation. Sufferers from this discharge are very apt to think that they are affected with spermatorrhœa. A well-known French author has drawn the distinction between nocturnal and diurnal, or true and false spermatorrhœa. The discharge of sperm which occurs at night is, as a general rule, entirely normal—simply a natural relief to the over-distended spermatic

vessels. Diurnal spermatorrhœa is not at all a discharge from the spermatic vessels, but from the prostate—a prostatorrhœa. This prostatorrhœa generally occurs after straining at stool; the hardened fæces press upon the prostate gland. It is apt to be kept up by intemperance and riding on horseback, or jolting in a wagon over rough roads. Sometimes even the act of walking will bring it on. Masturbation is its most frequent cause. A young man with this complaint reads the notices of quack doctors in the Sunday papers, and gets hold of pamphlets on the "Philosophy of Marriage," "The Evils of Indiscretion," etc., etc., perhaps goes to see some quack about his troubles, who, of course, does his best to impose upon his victim's fears. People talk about insanity as a result of prostatorrhœa. I have no doubt that young men who do as I have just said may in course of time become insane; but they become insane not from the effects of the prostatorrhœa, but from mental worry and anguish. Prostatitis is a very common affection, and is correspondingly curable. Spermatorrhœa is, on the other hand, one of the rarest of all diseases.

How are you to convince a patient that he is not suffering from spermatorrhœa? for, unless you can gain your patient's confidence, you may as well give up the case altogether. Do it in this way; collect a little of the gleety discharge and put it in the field of your microscope, and let the patient examine it and then compare its appearance with that of the spermatic fluid; his own sperm, if necessary. The spermatic fluid contains spermatozoa; the prostatic discharge contains the so-called "concentric prostatic calculi." So soon as your patient's mind is relieved, you have already won half the battle. It is not uncommon in this disease for the patient to experience some pain in the prostatic region during the venereal act. This man has not noticed any such pain. His condition is fast becoming one of marked hypochondriasis. He tells me, upon close questioning, that he smokes and chews a great deal.

We come now to the consideration of the cure and treatment of this condition. Of course the success of your treatment will consist largely, if not altogether, in your ability to overcome and put a stop to the chronic inflammation and discharge. If

there are one or more strictures present, of course the first thing for you to do is to relieve them, and this can best be done by gradual dilatation, by means of the expanding bougie which I have designed (see "New York Medical Record" for June 15, 1878, pp. 461, 462, 463). Where there is no stricture, but simply a condition of hyperæsthesia of the urethra, the best treatment, beyond all question, is by the persevering introduction of conical steel bougies of gradually increasing sizes. As the morbid sensibility of the part is obtunded, so, *pari passu*, the inflammation and discharge subside. In introducing the conical steel bougie, allow it to fall into the bladder by its own weight, and then remove it at once. Use an instrument of the same size once a day for five or six days, and then gradually increase the calibre of your bougie. If the meatus is unusually small, you will have to slit it up; otherwise, not. Some cases of the disease are obstinate. In these it will be necessary to use astringent local applications. To do this you may take the conical steel bougie and cut a cup-shaped concavity at the convexity of the curve. In this cup you may place some acetate of mercury, or sulphate of copper, or nitrate of silver. Or you may use the *porte caustique* of Professor Samuel D. Gross, with some nitrate of silver, with stramonium ointment, or cerate of opium. In using any instrument, be sure to turn it all the way around, so as to bring the caustic in contact with all the parts. If you choose, you may use the catheter-syringe, or any one of the thousand-and-one devices for making local applications. The best method of all those which I have described is that by the *porte-caustique* with the solid nitrate of silver. The more concentrated your solution of the nitrate, the better the results. After applying the caustic, the patient should be kept in bed. The caustic effect will, of course, terminate in suppurative inflammation. There is a great sensation of scalding in passing the urine, and, indeed, very often all the symptoms of acute urethritis; during the course of which the patient must be kept in bed, his diet cut down, and demulcent drinks administered freely.

Obstinate constipation and dyspepsia are very frequently attendant symptoms of the disorder. You must discover, of

course, whether the dyspepsia be acid or alkaline, and treat it accordingly. As regards the constipation, the lower bowel should be kept well open. An occasional purge will do no harm. As a routine medicine the patient may take each morning, before breakfast, f ℥vj of Hunyadi János water, or the following prescription, of which the late Dr. Robley Dunglinson was the originator, viz.:

℞. Magnesii sulphat., ℥j;
Potassii bitart., ℥j;
Ferri sulphat., grs. x;
Aquæ, q. s. ad. Oij.

M. S. A wineglassful every morning before breakfast.

Another very excellent plan is to inject five or six gobletsful of cold water into the rectum each morning. This at the same time opens the bowels and produces a tonic effect upon the inflamed prostate. The diet should be nutritious, but bland. The patient must eschew coffee, tea, malt and alcoholic liquors, and all greasy and fried substances. For breakfast he may take grits or oatmeal, meat, and bread and butter; for dinner, plenty of good rare beefsteak or mutton-chop, with potatoes, tomatoes, etc. Supper should be a light meal. As a drink he had better use water.

The patient must avoid all horseback exercise and all riding in carriages, horse and steam-cars. If he has business to attend to, let him walk, remembering to take his time about it.

If the patient be anæmic, he should be put at once upon a tonic treatment, something like the following, for instance:

℞. Quinæ sulph., grs. xl;
Tinct. ferri chl., f ℥iv;
Tinct. nucis vom., f ℥ivss;
Aquæ, q. s. ad f ℥ijss.

M. S. A teaspoonful four times daily, in water through a siphon.

If, on the other hand, there be a tendency to plethora, and the venereal appetite be constantly excited, the patient should be put under the influence of depressants, with an occasional purge. An excellent local tonic is a sitz-bath, taken every night before going to bed and every morning immediately after rising.

This bath should only be continued three or four minutes at first; afterwards the man may remain in the water ten or fifteen minutes. As regards the mattress used, it should always be hard, and the patient should be careful to empty his bladder thoroughly before going to bed, and to use only the lightest of coverings. He should also rise every morning at 4 or 5 o'clock and make water.

To keep down the venereal appetite, we make use of anaphrodisiacs; the bromides should be given in large doses. By large doses I mean thirty grains of the bromide of potassium thrice daily. The bromide should not, of course, be given to the anæmic cases. Instead of the bromide we may give a five-grain pill of the mono-bromide of camphor at bedtime.

If the disease is obstinate there is nothing better than local blistering. With a camel's-hair brush dipped in cantharides and collodion, a couple of lines should be drawn first on one side of the raphe of the perineum and then on the other.

Of course, in these cases it is important that intercourse should be had occasionally. The seminal vessels get filled, and must be relieved. No absolute rule can be laid down with regard to the frequency of intercourse. The patient must always be guided by his feelings after the act. As a general rule, once in two or three weeks is quite enough—enough, at any rate, until full virility be regained.

In some of these instances there is much functional disease of the heart, palpitations, flushings of the face, etc., etc. There is no better treatment of this condition than digitalis in small and long-continued doses—digitalin, 1-60th of a grain, or f ℥ss of the infusion, or gtts. vj–x of the tincture thrice daily. This treatment, to do any good, must be continued for two or three months, occasionally for much longer periods.—*Phil. Medical Times.*

Dr. John B. Roberts now has charge of the Philadelphia School of Anatomy ("Phil. Med. and Surg. Reporter"), and will commence a series of lectures on anatomy. This long-established school is surpassed by none in the city.

ABSTRACT DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."

CONDUCTED BY EDWARD MILLER, M. D., LOUISVILLE, KY.

Dislocations of the Muscles and their Treatment. By GEO. M. CALLENDER, F. R. S.—Mr. Callender did not think it necessary to apologize with M. Ponteau for the name given to these accidents, but did consider it strange that they were so little known. These hurts count but as a small detail in surgery, yet they are followed by considerable inconvenience, by pain of long continuance, and they interfere with the amusements or occupation, in the following of which the injury has been sustained. Their chief interest to the surgeon is their diagnosis; for when their nature is known, he can be clear as to their treatment and cautious as to his prognosis. Tendons are guarded by sheaths and sheltered in grooves, and yet are liable to be displaced from their natural position. Those most commonly dislocated are the biceps of the arm and the conjoined tendon, which, through the patella, is occasionally dislocated from the front surface of the femur. The leaders about the wrist are not infrequently dislocated, and unless the injury be early diagnosed, it will be easy to reduce the dislocation, but it will be next to impossible to prevent its recurrence. It is only during the few weeks following the accident that the repair of the surroundings of the tendon has a chance of being perfected. Therefore, in treating troubles of this kind, the dislocation should be promptly reduced and the parts kept at rest for about four weeks.

The true bearings of tendons may be destroyed by injuries to the bones and joints, and they have then to acquire new ones, a very slow process. Sometimes the tendon has to wear for itself a groove through a projecting mass of bone; sometimes it is diverted to one side and works at an awkward angle, and worst of all, a tendon becomes wedged between two bones or fragments of bone, as when the femur is split through its condyles and the patella drops into the cleft and is held there.

There is another class of cases in which the sheath of the

muscle is torn and allows the muscle to protrude. The muscles of the front wall of the abdomen suffer in this way, sometimes forming a tumor, which is liable to be mistaken for hernia. The fascia on the front of the thigh sometimes gives way and the muscles start forward.

The muscles most apt to be dislocated are those concerned in varied movements of the spine. Slender muscles are, of course, more readily displaced than large masses of muscle like the glutei.

Tearing of the cellular surroundings, perhaps straining of nerve filaments, rupture of small vessels, and pain and discomfort in trying to put in action the displaced muscle, are signs enough to point out the nature of the hurt. The inability to use the muscle without pain is a symptom of this accident as certain as the inability to use a joint after an accident is a sign of the straining or rending of certain structures of that joint. If, then, a case is seen in which sudden or unusual movements of the body have been followed by pain—local in character—made worse by certain movements, or preventing certain movements, and especially if such pain be referred to the site of muscular digitations about the spine, or to that of long slender muscles, as in the forearm, it is well to try the simple measures used for reducing the dislocation of a muscle. First, guided by the pain, decide as to the muscle or digitation of the muscle, the probable seat of the trouble; secondly, relax this muscle as far as possible; thirdly, by manipulation, such as by rubbing with the hand or kneading with the thumb, endeavor to replace it; fourthly, if this fail, make pressure over the part whilst the muscle is brought into action. This is necessarily painful; as guidance from the patient and action in the muscle is required, an anæsthetic can not be used.—*Brit. Med. Jour.*

Treatment of Facial Paralysis. By W. A. Hammond, M. D. The author states that, according to his experience, facial paralysis rarely spontaneously disappears entirely, though partial recoveries without treatment are met with. But partial recovery is not much better than a permanent non-improvement. Even after medical treatment recovery is not always

complete, doubtless due to the late period in which professional aid is sought, as no disease requires more prompt measures for its relief. He advises the use of strychnia, electricity, passive exercise, and support to the affected side of the face by a little hook in the angle of the mouth, and fastened to the ear by an elastic band. Dr. Hammond gives strychnia in increasing doses, so as to bring the patient rapidly under its full physiological influence. He uses a solution of sulphate of strychnia, one grain in an ounce of water, and gives ten minims of this solution (1-48th of a grain) three times a day for the first day, eleven minims the second day, the next twelve, and so on, till the patient experiences a cramp or rigidity in the legs or in neck or jaw. The cramp is usually first felt in the calves of the legs. The medicine is now stopped, and, if necessary, on the following day the solution is given as before, in doses of ten minims, and the doses are again increased to the extent of producing muscular cramp.—*St. Louis Clinical Record.*

Ununited Fracture of the Tibia. By M. Duplay.—In cases (" Gaz. des Hôp.") of delayed and imperfect union after fracture of the tibia, where there is no constitutional vice and the usual local causes of non-union are absent, it has been customary to attribute the evil to rupture of the nutrient artery. But M. Duplay points out the fact that the upper end of the tibia is the most vascular part of the bone, and its nutrition must be in a very active condition. This very vascularity of the bone, however, he regards as the cause of the difficulty, as the great number of torn vessels pour out a quantity of blood between and around the broken ends of the bone, which coägulates, and thus prevents the organization of the callus. M. Duplay claims to have met with distinct evidence of this extensive effusion of blood.—*Lancet.*

Rapid Lithotrity. By T. B. Curtis, M. D.—This operation was devised by Dr. H. J. Bigelow, and consists in crushing the stone in the bladder and evacuating the detritus through a large catheter. The operation is repeated again as often as necessary, until the stone is completely crushed and evacuated. After thor-

ough removal of the stone, the patient is placed in bed, a hot mustard-plaster poultice applied over the bladder, and an opiate suppository introduced into the rectum. The urine, as it collects, is drawn off with a rubber catheter, and in one or two days the bladder is washed out with a solution of borax, glycerine, and water. By this plan the irritation of the mucous membrane of the bladder by the angular fragments of stone is avoided. The results so far in the cases submitted to the operation has been good, and since the introduction of rapid lithotrity, the surgeon has a new method of operating, which he may choose, and thus remove a stone at a single sitting that would have required several by the old practice of lithotrity.—*Bost. Med. and Surg. Jour.*

Cystitis in a Female Simulating Stone in the Bladder.—A widow, aged twenty-nine, was admitted into the Adelaide Hospital on the suspicion of having a calculus in her bladder. Her health had been failing for several months, and for the last month she had an uncomfortable sensation in the region of the bladder, with a frequent desire to micturate. The symptoms increased, appetite was lost, fatigue easily induced, and at times there were shooting pains across the lower part of the abdomen and down the inner part of the thigh. About a fortnight before admission into the hospital, after some exertion, she felt faint, had a severe pain in the hypogastric region, and after great straining in micturition, passed a considerable quantity of blood, and had to take to bed. The pain was unrelieved by passing urine, which she did every half hour. The urine was acid, and contained blood and pus. A mass of enlarged glands was noticed on the left side of the neck. Mr. Barton sounded for stone, but failed to find one. Bland injections into the bladder with tonics and anodynes were tried without effect. The patient was, therefore, chloroformed, and Mr. Barton then dilated the urethra by means of Weiss' dilator, by two operations, with an interval of fourteen days; after which the urethra was so expanded as to admit the index-finger freely into the bladder. There was but slight hæmorrhage, and the incontinence lasted only one day. She steadily improved after this,

and left the hospital with complete control over the bladder, all pain gone, and appetite good, the urine healthy, and the glands in the neck much reduced in size. The dilatation occupied nearly a quarter of an hour, and on the last occasion was carried so far as to admit the index-finger easily into the bladder. Complete cure followed.—*Brit. Med. Jour.*

The Use of Common Warts of the Hand in Skin-Grafting. By CHARLES A. SEALE, M. D.—As common warts of the skin are collections of vascular papillæ, admitting of easy separation without injury to their excessively thick layer of well-nourished epidermis, Dr. Seale considered that their use in skin-grafting would give better and more rapid results than when ordinary skin of less vitality is employed. He verified this opinion by using them in a case of ulcer of the foot, previously treated without success by all known surgical expedients. For a number of days epithelial scrapings were dusted on the wound without any apparent benefit. Two large warts were then removed from the hand by transverse incisions, the blood carefully wiped off, each wart torn into quarters in the direction of its papillæ, and these eight portions of warts were planted about equal distances apart through little cuts in the granulating tissue about a line beneath the surface of the granulations. The wound was then hermetically sealed by a covering of mild balsam-of-Peru ointment, and at the end of forty-eight hours the dressings, in consequence of the purulent secretions, were easily removed. Each of the little grafts had received nourishment, and all were alive, nor did any of them slough, as we nearly always see before the white zone shows itself in ordinary skin-grafting; but without any degeneration continued to grow, forming new skin, until they joined together, and at the end of three weeks from the time of grafting the foot was entirely covered by skin and firm cicatricial tissue. Three years afterwards the cure remained complete.

Warts of the hand can be used with better results than small pieces of normal skin in skin-grafting, in consequence of being easily separated uninjured into numerous cylindrical rolls of great vascularity, and containing a large proportion of hyper-

trophied epithelium, which, when planted in healthy granulating tissue, readily adapt themselves to the new soil, receiving direct nourishment and quickly growing as starting points for a new and smooth epithelial covering.—*Medical Record.*

Varicose Ulcer and its Treatment. By JOHN GAY, F. R. C. S.—Mr. Gay does not think that a clear notion exists either as to the specific distinction between varicose and other ulcers of the leg and their diagnosis, or as to the precise relation between the pathology of such an ulcer and the especial condition of the vein. A general impression prevails that an ulcer on a limb, the veins of which are either tortuous and enlarged or actually varicose, is related to such veins as effect to cause, and many a vein has been needlessly mutilated through this misapprehension. All ulcers with varicose veins are not varicose ulcers. Varicosity, in order to constitute a cause of ulcer, must be seated in certain veins and be attended with certain disturbances of the circulation; that is, such a vein must be useless as a channel in aiding the onward flow of the blood. A vein may become comparatively useless, and yet not a cause of ulceration Now, varicose ulcers have certain favorite sites, and these are in relation to certain valvular arrangements. The leg and foot are segmentally divided in fixed situations by a series of valve barriers, which extend horizontally across the limb and intercept all regurgitation of blood through one such barrier to a segment below. One of these barriers is met with a short distance below the knee-joint; a second a short distance above the ankle-joint; a third immediately below that joint; and there are others more distally placed. A varicose ulcer occurs in close contiguity to one of these barriers, and is associated with incompetency in one of the valves of such barrier belonging to a saphenous tributary—not to the saphena itself. When a barrier valve is rendered incompetent by disease on elevating the limb the vein will be emptied of its blood, and filled again on lowering the limb. *It falls, however, from above, and not from below.* The result is that, in this especial vein, the weight of the superincumbent blood column is in excess of the forces engaged in propelling it, the skin bordering and intermediate between it

and the valve barrier next below becomes congested and ultimately ulcerates. The resultant sore is a genuine "varicose ulcer." If the tissues be relieved of their superfluous blood by rest and by elevation, the sore will heal.

The only effective remedy consists in the establishment of a quasi-valve in that part of the vein in which it has become inert; and this can only be done by some one of the ordinary means of effecting its obliteration. Thus the essential factors in respect of a varicose ulcer are extreme vein degeneration and resultant incompetency of its valve—always a barrier valve; the cure, its substitution by obliteration of the vein-channel in that situation.—*Lancet.*

Paracentesis Abdominis et Thoracis by Capillary Tubes. By James F. Goodhart, M. D.—Dr. Goodhart gives an account of four cases of ascites treated in this manner, in which the effusion, varying in quantity from eight to ten pints, was drawn off at periods of time averaging twenty-one hours. This method of performing paracentesis abdominis, originally proposed by Dr. Southey for the treatment of anasarca, consists in introducing into the peritoneum a canula of very fine bore, similar to the needle of a hypodermic syringe, and by means of an attached india-rubber tube, draining the fluid slowly away. The tubes are retained in the abdomen for varying periods, generally about twenty-four hours. Should it be necessary to use them longer, it would probably be better to withdraw the tube and insert another at some other spot. Besides these cases of ascites, Dr. Goodhart treated in a similar way a suppurating hydatid cyst of the abdomen and an empyema. Purulent fluids can not often be treated by drainage through minute tubes, more especially in the chest, where the pus is liable to be thick. In pleuritic effusions of a serous character this method has several points in its favor, as compared with aspiration, and in peritoneal effusions the advantages are sufficiently obvious to make it a wonder that it is not more usually adopted.

Dr. Goodhart enumerates the following advantages of Dr. Southey's method. In the first place, there is the difference in the severity of the operations. In the one there is the painful

incision through the skin and the passage of a large trocar. Paracentesis by a minute trocar and canula is hardly more than the pinch of a pin, and even a child does not mind it. Secondly, the major operation is by no means free from the risk of peritonitis. Dr. Habershaw in 501 cases of peritonitis, gives fourteen as occurring after paracentesis. Thirdly, and this is the most important consideration of all, in the major operation the peritoneum is drained at once and almost completely; in the minor the fluid is removed gradually in the course of several hours. Except in those occasional cases where the respiration is urgently embarrassed and immediate relief is necessary, it is harmful to empty the peritoneal cavity suddenly. There is danger of shock and syncope, and in other cases danger of temporary stasis of the abdominal circulation. Furthermore, in many cases a timely withdrawal of a certain amount of fluid and careful attention to strapping and bandaging of the abdominal walls would be followed by permanent relief, and sometimes by cure. *Per contra*, to empty the abdominal cavity at once is to favor the transudation of so much more fluid and to afford only temporary benefit. The small drainage tubes should be carefully cleaned, and should be placed in some boiling germicide, such as a solution of carbolic acid, before their introduction.—*London Lancet.*

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*City Hospital Clinical Records.* Reported from the Service of EDW. VON DONHOFF, A. M., M. D., Visiting Surgeon, by GEO. M. CARNACHAN, M. D., Resident Assistant.

CASE I.—*Frost-bite of Foot Treated by Lisfranc's Method of Amputation, and "Open Method" of After-Treatment.*—John Birney, aged sixty-four; born in Ireland; by occupation a mason; admitted to City Hospital July 6th for a diseased foot.

Previous History.—Has been a drinker all his life, and has

been occasionally drunk. During the latter part of the fall of 1876 patient was exposed during inclement weather, and sustained a severe frost-bite of the right foot, more especially of the toes. This was followed by gangrene, which resulted in the loss of all the toes.

Present Condition.—Patient presents a well-nourished appearance; appetite good; temperature normal. On the right foot at the original site of the metatarso-phalangeal articulations is seen a dirty, exceedingly indolent, ulcerated surface; lying exposed in its bed are the ends of the metatarsal bones. The foot is generally enlarged as the result of infiltration, and near the seat of the ulcer evidences of capillary injection and a sluggish circulation are seen.

Treatment and Progress.—Lisfranc's operation was done. Anterior and posterior flaps, and an oblique section through the bones, through the middle of their long diameter, were made; the resulting wound was treated by the "open method"* with the following termination.

July 7th, 7 P. M., temperature, 101°

July 8th, 8 A. M., temperature 98°; pulse 72; appetite fair. From this time forward, with the exception of July 10th, when the patient had a slight material elevation of temperature, he remained free of fever, and had an excellent appetite until his final discharge from hospital.

During the treatment the wound granulated rapidly and healthily, and finally through the aid of rubber adhesive strips, which were resorted to during the period of cicatrization, healed perfectly, leaving only a linear cicatrix extending transversely over the end of the foot.

Remarks.—The foregoing case was made the subject of the first experiment in the treatment of extensive fresh wounds

* This method consists in suspending the limb in a well-padded cradle attached to a rock, which sits over the bed, by means of wire. Directly over the wound, which is allowed to be perfectly exposed to the atmosphere, is placed at a distance of about sixteen to twenty inches a reservoir (bucket or other vessel with perforations in the bottom, through which latter strips of cotton domestic are pushed) filled with carbolized water, which, by means of the strips mentioned, is guided so as to bathe, drop by drop, the wound surface.

(amputations, etc.), by the "*open method*" and *drip apparatus* in this hospital. The subject was a favorable one for the purpose, and as is shown by the foregoing notes, made a most excellent recovery, and much more speedily than he would have done had the case been treated in the ordinary way, i. e., by closing the wound immediately after the amputation. In the latter event the extensive inflammatory product (swelling and infiltration) would have undoubtedly militated strongly against union by first intention, and in all likelihood the case would have been prolonged indefinitely by those secondary phenomena attendant upon amputations through markedly changed (pathologically) tissue. In this case, as in others similarly treated, we had reason to feel gratified with the speedy and brilliant results obtained from the use of the drip apparatus. Birney's stay in hospital lasted one month and eight days.

CASE II.—*Chronic Cystitis.*—H. C. Gray, admitted to City Hospital January 16th. Born in Kentucky; aged 45.

Previous History.—Had gonorrhœa when 14 years old, and ever since then until about four and a half years ago, when he recovered from the disease quickly. Has been a considerable drinker since his manhood. When twenty-three years old he had some difficulty in passing his water, which was attributed by "the doctor" to calculus. He spontaneously recovered from this trouble, and felt perfectly relieved of "bearing-down pains" during micturition. About five years ago he began to experience a sense of weight in the region of the perineum and a "burning" at the os-urethræ. This condition remains. His bowels have always been pretty regular. He has frequently noticed a creamy sediment in the bottom of the urinal; has constantly since its beginning experienced pain, bearing-down and burning sensations in the perineum, "just in front of the anus;" has frequently noticed that his fæces are flattened and furrowed.

Present Condition.—(June 1st, when Dr. Von Donhoff took charge of the ward). Examination of the rectum revealed some enlargement of the prostate and a few hæmorrhoidal tumors. Urethral examination discovered a narrowing of the canal at the beginning of the bulbous portion. There was no foreign

body in the bladder. The patient micturates very frequently and scantily, and suffers very much during the act. He is the subject of constipation, which is evidently due to the patient's timidity. He is fearful that defecation would occasion great pain. The patient is anæmic and thin. The urine is cloudy and high-colored, and when permitted to stand is shown to be highly charged with pus, mucus and bladder epithelium.

Diagnosis.—Chronic cystitis and urethral constriction.

Treatment and Progress.—The bowels to be kept open with saline aperients; a No. 6 bougie to be introduced, and the bladder to be washed out daily with the following: ℞. Acidi nitrici, gtts. v; aquæ puræ, Oj; the patient to keep the recumbent position. A special diet, consisting of an abundance of wholesome, easily-digested food, was ordered, and the use of coffee proscribed and milk substituted.

June 4th. Can pass water more freely, and has less sense of weight in the perineum. Bowels lax, an occasion of rare good cheer to the patient. Nitric acid increased to gtts. xx. This treatment was continued until June 14th without change, the patient improving meanwhile, but slowly.

June 14th. Patient was placed upon an exclusive milk diet, the bladder symptoms being treated locally, as before indicated in these notes.

August 23d. The patient was discharged cured. During the latter part of his stay in hospital patient suffered occasionally from malarial (intermittent) disturbances, but readily recovered under the use of quinia. The milk diet was persistently kept up (the patient receiving one quart four times daily) from June 14th to August 23d. As early as July 17th the urine became quite clear, and exhibited but a trace of purulent deposit now and then until August 10th, when this ceased altogether.

Remarks.—The patient, whose case is recorded above, had been the subject of cystitis for more than twenty years, and had been subjected to all manner of treatment by various physicians and surgeons. His failure to recover under their care may doubtless be ascribed to their inability to compel, if prescribed, perfect rest and coöperation on the part of the patient; hospital

discipline secured these elements of success. The milk diet is regarded by Dr. von Donhoff as the principal curative therapeutic agent, and "this was beneficially seconded by the bladder-washing, catheterization, rest, etc."

PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

Alumni Association of the Louisville Medical College.

A special meeting of the Alumni Association of the Louisville Medical College was held in the College Building on Tuesday, October 8th, at 2½ P. M., for the purpose of taking action regarding the death of their late President, Dr. E. T. Easley, of Little Rock, Ark., who died of yellow fever September 30th, at Memphis, Tenn.

The Senior Vice-President being absent, Dr. C. W. Null was called to the chair, and Dr. W. H. Mayfield was made Secretary.

After the chairman had stated the object of the meeting, Dr. Irvin Keller made the following remarks:

Gentlemen,—We have met to-day to mourn the loss of one of our greatest; to pay a tribute to the memory of one of our noblest; to weave a garland about the tomb of Easley. The occasion opens the flood-gates of memory, and there comes rushing upon me numberless illustrations of his beautiful character, great mind, and unfaltering devotion to the cause in which he fell. Young, brilliant, ambitious, his life was a life of immense possibilities. The gates of a glorious future stood ajar. The realization of his fondest hopes was almost consummated. He was standing upon the threshold of greatness with the "amethyst bowl" and its magic elixir just touching his lips when this sudden, fearful, terrible holocaust swept from human sight a figure destined by nature to stand preëminently among the greatest. But closed forever is his book of human purpose, human activity, and human obligation. So it is with human

hopes, they dazzle but to dismay. To-day they furnish food for intoxicating dreams and glorious anticipations; to-night their seductive beauty is all lost in ashes with no resurrecting phœnix.

In his death science has lost an advanced thinker, the world a great surgeon, society a chaste ornament, and our dear old "Alma Mater" a standard-bearer who ever carried her banner in the front rank of the profession. He fell with his armor girded about him, and in his fall was displayed as sublime a heroism as ever immortalized warrior, statesman, or divine.

"'Twas his own genius gave the final blow
And helped to plant the wound that laid him low.
So the struck eagle stretched upon the plain,
No more through rolling clouds to soar again,
Viewed his own feather on the fatal dart,
And winged the shaft that quivered in his heart.
Keen were his pangs, but keener far to feel;
He nursed the pinion which impelled the steel;
While the same plumage which had warmed his nest,
Drank the last life-drop of his bleeding breast."

A committee of three were appointed by the chairman to draft suitable resolutions. The following is their report, which was unanimously adopted by the Association:

Whereas, By the dispensation of an All-wise Providence, our highly honored and sincerely beloved professional associate and President has been removed from our midst. We, the members of the Alumni Association of the Louisville Medical College, adopt as an offering of affection and esteem to his memory the following resolutions:

Resolved, That his devoted love for his profession, his earnest pursuit after medical knowledge, which pursuit showed fulfillment by his advanced thought and remarkable acumen, placed him in the front rank of physicians whose genius and application gave promise of noble fruition.

Resolved, That among the lofty spirits of the medical profession who bade farewell to friends, family and home to offer their lives willingly in the cause of humanity, he is to be deeply mourned, and that he was a shining light, which, like the sun, can never set.

Resolved, That in his death this Association, the medical profession, and the world at large has lost a zealous and noble member and a faithful and unselfish friend and an honorable and honored citizen, who, while living, was a crown-jewel among us, and whose valiant death became him as much as all his noble deeds reflected lustre on his own life.

Resolved, That these resolutions be spread upon the records of this Association, be published in the medical press of Louisville, the "Virginia Medical Monthly," the daily press of Louisville, Little Rock, and Memphis, Tenn., and a copy, duly attested, be presented to his family.

Resolved, That the members of this Association create a fund, known as the Alumni Memorial Fund, the proceeds of which go to the erection of a suitable tablet to endear the names of our members who have fallen by the yellow fever scourge of 1878 imperishable to this institution.

M. F. Coomes,
Geo. M. Carnachan,
Irvin Keller,
} *Committee.*

C. W. Null, M. D., Chm'n. W. H. Mayfield, M. D., Sec.

The American Gynæcological Society.

The third annual meeting of this Society was held in Philadelphia, at the hall of the College of Physicians, on the 25th, 26th, and 27th of September, 1878. Twenty-seven Fellows of the Society were present from different parts of the Union, principally from the States east of the Alleghanies. Although the association can date its birth no farther back than the Centennial year, it has, from the first, taken a position in the front rank of organizations devoted to special departments of medical science; its published transactions have met with a flattering reception and ready sale, and medical reviewers, with one accord, have spoken of them in terms of unqualified praise. The active membership is limited by organic law to sixty Fellows, and in order to maintain the high standard adopted, it is prescribed that each new aspirant for membership must accompany his application with an original paper upon some subject connected with gynæcology, which essay is examined and reported upon by a committee before the candidate can be balloted for. A few Honorary Fellows may also be chosen.

The programme for this meeting contained the titles of twenty-three papers, some of which were not reached when the hour for adjournment brought the session to a close. Those that were read may, almost without exception, be considered as valuable contributions to gynæcology, and the discussions upon them were of great practical interest. The meetings were largely attended, many of the physicians of this city availing themselves of the opportunity of being present during the proceedings.

The time of the Society being so largely occupied, during

both the morning and afternoon sessions, by the literary and scientific exercises, but little opportunity was allowed for social entertainments; an attractive lunch was, however, provided at the close of each morning session by several of our Philadelphia members who resided near the place of meeting. A reception at the residence of Professor Goodell on Wednesday evening, and a dinner at St. George's Hall given by the Obstetrical Society on Thursday evening, were the public entertainments.

The meeting was called to order by Dr. Goodell, first vice-president, at 10 30 A. M. and a brief address of welcome was delivered by Dr. A. H. Smith. After the calling of the roll, the secretary announced the names of a number of guests, who were invited to take part in the discussions.

Dr. J. C. Reeve read a report of a multipara, in which rupture of the perineum took place without implication of the vulva, the labor being otherwise uncomplicated, but very rapid. Prompt attention during the early stages of labor, and the application of the forceps where indicated, will generally prevent this accident, which occurs most frequently in primiparæ, or in others where cicatricial bands exist in the lower portion of the vaginal wall.

Professor White advocated lateral incisions in the perineum where laceration is threatened.

"The Surgical Treatment of Stenosis of the Cervix Uteri," a voluminous article of 250 pages, by Dr. J. Marion Sims, of New York, was presented and extracts read from it by the secretary. The author advocated Simpson's bilateral incisions of the cervix in those cases of anteflexion, complicated by stenosis, where the lips of the uterus are not relatively changed by inflammation. Sims' operation of antero-posterior incisions, however, is urged where the posterior lip is thickened and elongated. A glass plug is inserted after the operation, and the vagina tamponed. The patient keeps her bed for several days, as pelvic cellulitis may appear on the fifth or sixth day, and Dr. Wilson, of Baltimore, in the discussion of the paper, reported a death on the fourteenth day. Dr. Sims had operated upon nearly a thousand cases and had two deaths.

Dr. Elwood Wilson, of Philadelphia, did not favor the operation described. He had found simple dilatation to accomplish all that is desired, with less risk.

Dr. Noeggerath pointed out the fact that while these incisions are intended to strengthen the canal of the cervix in a case of anteflexion of the second degree, they fail to accomplish this, which he demonstrated by a diagram. They also invade the parenchyma of the uterus where there are lymphatic vessels and glands, and may thus lead to septic poisoning. He believed that most of the cases reported cured were, in reality, only temporarily relieved.

Dr. Fordyce Barker had encountered at least a hundred cases where this operation had been ineffectually performed for the relief of the condition referred to, and was cognizant of nearly a score of deaths from it which had never been published. He believed that precise rules for the recognition of cases requiring this operation are still wanting, although it has been before the profession for nearly thirty-three years.

Dr. Emmett formerly had performed this operation very often, but his observation had taught him, where the flexion occurs above the plane of vaginal junction, that it is generally the expression of trouble elsewhere. If the condition results from pelvic cellulitis or adhesions, the operation will fail to give more than merely temporary relief.

"A Case of Extra-Uterine Pregnancy, with Discharge of Fœtal Bones through the Bladder," was reported by Professor White, of Buffalo. The patient was not married, and the symptoms at first were those of dysmenorrhœa and menorrhagia. In May, 1875, this condition had existed several months, and Dr. White, being called in consultation, detected an indistinct tumor in the left iliac region, perceptible also in the vagina, which was thought to be a hæmatocele, pregnancy not being suspected. A puncture was made with the exploring needle, which brought away a few drops of a light, straw-colored fluid. Severe peritonitis followed the operation, but after it subsided the tumor was scarcely perceptible, but the clear fluid continued to come away for some time, as if a vesico-vaginal fistula had been established. In December the patient complained of vesi-

cal pain and tenesmus, and upon examination a bone was found at the urethra, and during the next three months small bones were frequently discharged, some of which were coated with calcareous deposit. The discharge of fœtal bones through the bladder was declared to be a comparatively rare accident. The case illustrates the truth of Dr. Parry's statement, that cases of extra-uterine fœtation should be left alone, as they do better if left to nature than when attacked with the knife.

Dr. John C. Atlee remarked, as an exception to this rule, that where there is danger threatening to the mother, an operation becomes necessary. He reported a case successfully operated upon by Dr. W. F. Atlee, of this city. He insisted that the placenta in such cases must not be interfered with by the surgeon, but the cord should be tied, cut short, and dropped into the abdomen.

A case of "Head and Foot Presentation in which a Fracture of the Spine occurred in Utero," was made the subject of a paper by Dr. Johnson, of Washington. In a similar instance of head and foot presentation, but complicated by placenta prævia, Professor Penrose had succeeded in effecting version by placing a fillet around the presenting ankle and making traction upon it at the same time that the head was being pushed upward.

"The Necessity for Early Delivery, as demonstrated by the Analysis of One Hundred and Sixty-one Cases of Vesico-Vaginal Fistula," by Dr. T. A. Emmett, of New York, was a paper of great practical importance, demonstrating the danger of delay in the second stage of labor, and the value of the forceps in cases of impaction in the excavation. He laid down the rule, that when the head ceases to recede after each pain, the forceps should be applied. He had never seen a case where vesico-vaginal fistula was directly attributed to the use of the forceps.

In the discussion upon the paper, it was highly praised by Dr. Fordyce Barker, who said that the danger from the use of the forceps in competent hands has been greatly over-estimated. The importance of evacuating the bladder before artificial delivery must always be remembered. Dr. Penrose believed that the most valuable point in this paper was that the author had

defined with precision the exact period when the forceps should be applied. The head only ceases to recede when it has become impacted in the canal. Drs. Atlee, A. H. Smith, James P. White, Goodell, and others spoke in commendation of the forceps where judiciously and skillfully used, but condemned their ignorant application as leading to injury, and often to lacerations of the cervix uteri. Dr. Storer, of Boston, had not met with a rupture of the perineum where the forceps had not been employed; but in the hands of experienced men it was generally admitted that tearing of the perineum may be prevented in many cases by the forceps, which give the operator control of the head. Where the head is impacted and the bladder distended, Dr. Barker recommended the use of the aspirator. *Phil. Med. Times.*

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

The Constituents of Climate, with Special Reference to the Climate of Florida.

BY FREDERICK D. LENTE, A. M., M. D.

PALATKA, FLA., 1878.

NOTE.—This article is written in epistolary style at the suggestion of the editor.—F. D. LENTE.

Williams (op. cit.) remarks: "Climate is only one portion of the system of attack which we organize against the dread foe which decimates our population, and would be worth little if not combined with medicine and hygiene, and a determined will to wrestle bravely against the home-thrusting enemy." Dr. T. G. Horn (Trans. Colorado State Med. Soc.) thus discourses: "Invalids, as a class, are generally careless, self-willed, and unreasonable. Many naturally so; more made so by instructions given them by their physicians East telling them almost invariably that they will not need to consult a physician here, but 'go into the mountains,' 'live out of doors,' etc. So, with his

pocket full of prescriptions from home, the poor sufferer rushes madly into this altitude, and without proper medical advice, soon rests in his grave." The following remarks of Forry, than whom no one is better qualified to give advice in this connection, are so apposite that I quote them at length: "Let not the invalid, however, trust too much to change of climate. Unfortunately for the character of the remedy, it has been recommended indiscriminately and without proper consideration. It has been too often resorted to as a last resource or a forlorn hope; or, in cases susceptible of alleviation or permanent cure, it has been wholly misapplied. One person is hurried from his native land with the certainty of having his sufferings increased and his life shortened, instead of being allowed to die in peace in his own family; while another, who might derive much advantage from the change, is sent abroad wholly uninstructed in regard to the selection of a proper residence or ignorant of the various circumstances by which alone the most suitable climate can be rendered beneficial. It is one of our most powerful remedial agents, and one, too, which, in many cases, will admit of no substitute. But much permanent benefit will result neither from travelling, nor change of climate, nor their combined influence, unless the invalid adheres strictly to such regimen as his case may require. This remedy—change of climate—must be considered in the light of all other therapeutic means, and to insure its proper action, it is requisite that the necessary conditions be observed. The patient should, in a measure, regard the change of climate as merely placing him in a situation more favorable for the operation of the remedies demanded by his disease."

Another cause of failure is this: Patients with only a moderate amount of disease often improve so much in one winter that they, and sometimes also their physicians yielding to a natural desire of the invalids to remain at home, permit them to do so during the second or third winter. The consequence is that a catarrh, or pneumonia, or some complication incident to the climate and to overwork, or possibly only the devitalizing influence of a cold and damp winter, causes a relapse which is fatal, or insures a travel over a still longer road of invalidism

than before. No matter how slight the evidences of phthisis in a young person may be, especially if there be hereditary predisposition, he should be fully impressed with the idea that his change of base must not be for one or two seasons, but probably for several, however flattering may be the results of the first or second season.

It has been deemed advisable to introduce the above cautions, which every prominent writer on this subject has felt constrained to employ, because such incalculable harm has resulted from the prevailing habit among medical men of advising their patients against availing themselves of that which is absolutely necessary to the success of climatic change in the great majority of instances—proper medical supervision and prescription. In the first place, patients leaving home in a feeble condition, travel rapidly down to Florida, not resting, as they should, on the way, and arrive more or less exhausted by the journey, and then, instead of perfect rest for a day or two at least, and in bed if necessary, they drag themselves about, and sometimes do not get thoroughly rested for weeks. Sometimes from a too sudden change from a very cold to a warm temperature, gastric or hepatic troubles arise, and require treatment. Some patients with hectic fever, with a temperature ranging from 103° to 104°, pursue the same course, struggling to make a show of strength, and determined not to give up, when they should be in bed and taking the proper remedies. Sometimes a harassing cough, contracted perhaps from the exposure of their journey, or on some pleasure trip, or in sight-seeing, drives away their own sleep and that of their neighbors night after night, yet they are deluded into asserting in the morning that they have had a "pretty good night," their whole aspect denying the assertion. Profuse and exhausting sweats are allowed to go on unchecked by remedies, or are tampered with as are their other complications, not infrequently by domestic remedies, or the advice of sympathizing acquaintances. Dyspeptic symptoms often arise from injudicious eating, or perhaps as a consequence of their disease, and interferes with nutrition during the whole winter perhaps. Loss of appetite, especially during the latter part of the winter often troubles the invalid. Diarrhœa is a not infrequent com-

plication, which is generally neglected until it becomes a serious matter. These are a few of the many exigencies which may require the attention of a judicious physician, and of one on the spot. Dr. J. R. Nichols, in his recent pamphlet (Essay, read before the Essex North Massachusetts Medical Society, May, 1878), truly says: "After you have reached Florida, you can no longer safely rely upon any advice you may obtain from your home physician in response to your representations to him by letter. If you need advice, seek it of some of the very able, cultivated, experienced resident physicians where you may stay."

The occurrence of these various complications, and the want of proper advice as to their management, lead to another prevalent and dangerous habit of invalids, which, more than any other, perhaps, opposes their efforts and sacrifices in search of health. Experiencing aggravation of some of their symptoms, or the advent of new annoyances, they arrive at the conclusion that they have not found the proper location, and seek some other, to go through a similar experience, perhaps; thus they go on, wasting the winter in experiments, and finally return home in the spring no better, probably worse. Whereas, a little judicious medical advice or caution, in the first instance, might have put them on the road to the melioration or cure of their complaint.

Among the diseases for which a climate like that of Florida is particularly suitable may be enumerated *Bright's disease* in its earlier stages; for, as in the case of tubercular phthisis, it is worse than useless to send the very advanced cases. *Throat* and *bronchial affections*—these usually recover rapidly. But now and then a case of "sore throat" is sent as a curable one, when there is tubercular ulceration of the epiglottis, consequent on disease of the lungs, of which the patient has been kept in ignorance. These are, of course, hopeless, and very much damage the reputation of climatic treatment; cases of *uncured pneumonia*, consolidation, which has survived the usual treatment and has left the invalid feeble, short of breath, with cough, loss of appetite, etc. Dr. Bizzell (Trans. of Med. Asso. of Alabama) says: "Such cases recover almost magically in the warm,

mild air of Florida"; children of *strumous or tubercular diathesis*, particularly those convalescing from *measles, scarlatina*, or *whooping-cough; rheumatism and neuralgia.* It may be thought singular that the former should be decidedly benefited here, owing to the amount of moisture supposed to exist in the air. But the *fact* is that, without any medication, it does yield, and sometimes rapidly. This may be added to the evidence already adduced in my first letter to prove that the climate is not so moist as has been represented; that form of *dyspepsia*, which may be called *nervous*, and which is becoming more and more common every year, as the nervous system is more and more overtaxed, and which often promptly yields to the *bromides*, is alleviated in Florida; many of the *nervous and neuralgic symptoms attending uterine disease*, or surviving its successful treatment (as far as local lesions are concerned), do well. Patients convalescing unsatisfactorily, in a cold climate, from almost any exhausting disease, even from malarial affections (witness the writer's own case), will find a change to a temperature which will enable them to derive the benefit, through a long winter, of constant fresh, open air extremely beneficial. Very *old* persons without any disease will have their lives prolonged and rendered more comfortable by a winter residence in the mild, genial air of Florida; especially old *men*, who suffer from *bladder and prostatic troubles.* "Lastly, Florida offers a haven of rest and quiet for that condition which is unfortunately becoming so prevalent among the restless, driving denizens of our Northern towns and cities, which comes under the comprehensive designation of *nervous prostration;* what Handfield Jones terms *cerebral paresis*, and which was thus described by James Johnson nearly fifty years ago: 'There is a condition of body intermediate between sickness and health, but much nearer the former than the latter, to which I am unable to give a satisfactory name. It is daily and hourly felt by tens of thousands in this metropolis (London) and throughout the empire; but I do not know that it has ever been described. It is not curable by physic, though I apprehend it makes much work for the doctors ultimately, if not for the undertakers. It is that WEAR AND TEAR of the living machine, mental and corporeal, which

results from over-strenuous labor or exertion of the intellectual faculties rather than of the corporeal powers, conducted in anxiety of mind and bad air.' For this cerebral consumption, as we may justly term it, Florida affords as healing a balm as for the pulmonary variety."*

These cases are met with every year in increasing numbers in men of great business capacity and untiring energy and industry, in all kinds of business and in all the professions; men ambitious of wealth or distinction, often goaded on by the necessity of supplying the extravagant wants of large and expensive families; heads of our great corporations, railways, trust companies, insurance companies, etc.; men not content with the management and responsibility of one such organization, but often at the head of several, whose mental powers have been at their utmost tension, with very rare intervals of relaxation for years. Sad it is to witness the wreck of such minds. In the light of this experience, we are almost disposed to regard the invention of the telegraph, and especially of the ocean telegraph, which enables us and forces us to compress so much business into so small a space of time, as a very equivocal blessing. The facilities for accomplishing all the inducements for undertaking increased work and responsibility thus multiplying year by year, it does not require a prophet to predict a yearly increase of nervous diseases and cerebral wrecks if our people generally, our educated and mercantile classes, are not aroused to the necessity for a decided reform in their reckless career. Dr. Nichols says, in his recent pamphlet (Essay read before the Essex North Mass. Med. Soc., May, 1878): "Without further remark, we will say now, that for that class of ailments depending upon abnormal nerve functions, no climate is better calculated to afford relief than that of Florida. The poor, broken-down man of business, the nervous wife and mother, wearied and worn with household cares and duties, will find in this delightful air a balm well calculated to restore nerve action to its healthy conditions. The rest, the mental and physical rest, which comes even during a brief residence in Florida is, in our

* Florida as a Health Resort. By F. D. Lente, N. Y. Med. Jour., Nov. 18, 1876.

view, one of the most remarkable results of its climatic influence." "The best possible medicine for weak nerves is out-of-door life in a climate not subject to violent changes; such a climate is afforded by Florida in winter."

These conditions of the nervous system are not only of themselves of the most serious import, but still more so when we consider that they are very frequently only the forerunner of phthisis. This disease begins usually in impairment of nerve power, with exhaustion from overwork, mental or physical. "In fact," says Edwin Lee (Fiske Fund Prize Essay), "the destroyed illusions, the deceived hopes of the realizations of expectations too often exaggerated by vicious systems of education, the difficulties and anxieties which so often beset the path of life, etc., may well be regarded as mainly instrumental in the production of organic diseases, and especially of *pulmonary consumption*."

It is the duty of the physician to be watchful of the development of such cases, especially in phthisical families. These symptoms, of what has been termed the pre-tubercular stage, are generally quite obvious—failing health, loss of appetite, of interest in events or surroundings, dyspepsia, lassitude, sometimes anæmia, but no *physical signs*. These are the cases for *cure* by change of climate. "The number of cases like these," says Dr. Geddings (op. cit.), "is simply enormous, and the physician who, forgetting that his mission is to avert disease, as well as to cure it, sounds no note of warning, is not only derelict in duty, but guilty of negligence, for which the term criminal is none too harsh. Year by year cases come under the writer's observation, where neglect on the part of the physician to give this warning, or its disregard when given, has caused a sacrifice of human life which might have been prevented."

We have said that patients must not *rely* too much on climate; neither must they *expect* too much. This also has led to frequent disappointment and a failure to appreciate the benefit of climatic change. A decidedly consumptive invalid comes to Florida, and because he has not regained his health and strength in the spring, he concludes that the change has done him little or no good. Perhaps he feels little or no better. Yet he does

not know how much *worse* he might have been had he remained at home. He comes to Florida to avoid dangers to which a northern climate would have exposed him, and if he gains nothing more than the escape from these dangers, catarrhal troubles, pneumonia, pleurisy, bronchitis, etc., he has been well paid for his sacrifice.

A medical invalid thus philosophizes on the subject: "One chief object in spending the winter in Florida is this: A man with chronic disease should be satisfied if, during the winter, he merely keeps his enemy at bay. He is content if his disease, his enemy, makes no progress there while, during the spring and summer, he tries to get well. In this the climate of Florida helps him; it is the best place in which the invalid can put his disease into winter quarters previous to undertaking the summer campaign. And if life is to be a constant retreat, a running fight with and from death, this is a strong fortress into which he may retire, and from which he may often set his enemy at defiance."

With regard to the proper *time* for going to Florida, one may go from the first to the middle of November if his condition requires so early a retreat from inclement weather. If, however, he has only a limited time at his disposal, he had better wait until the first of February. The oranges are then in perfection, and the weather also. If he does not wish to spend the whole of a long winter and spring in Florida, and can not remain at the North, or if he pines for a change, he may go up to Aiken, or he may stop at Aiken in the early part of the winter. October is delightful there, and there is usually no cold to interfere with an invalid until Christmas, and often later. "This," says Dr. Geddings (op. cit.), "is undoubtedly the finest portion of the year, the air being just cold enough to act as a tonic without chilling, or in any way adding to the discomfort of even the most sensitive invalid." Aiken has also one of the finest hotels in the southern country.

When shall one leave Florida on his return north is a more important question. The warning has been repeated again and again by all writers on climate: "Don't get home too early." But still the fatal mistake continues to be made, and the sacri-

fices and benefits of a whole winter are often thrown away by a premature return in the spring. Quite a long spell of warm and beautiful weather in April, or even in March, which often characterizes our treacherous northern climate, when the grass becomes green and the early flowers put forth their petals, and the birds begin to sing, beguiles the invalid or his friends, who long to see him home among them again, into the belief that an early summer is at hand, and he hastens away from his safe retreat, to be greeted, on his arrival, with a cold and chilling blast, not seldom with sleet or snow, and to experience perhaps weeks of weather more dangerous than that of mid-winter. This the writer experienced even in May last. Better remain at home all winter than return too early in spring.

SARATOGA SPRINGS, September 8, 1878.

Note on Sea-Sickness.—The question whether it is preferable to travel by land or by sea naturally presents itself to the invalid and the tourist. Railways are usually preferred, many fearing to face the dangers of the sea and the horrors of sea-sickness. As regards danger to life, that of the sea is certainly not greater according to statistics than by land. There are many advantages of travel by sea. The fatigue is less; the comfort is usually greater; the danger of taking cold and of exposure generally is less, or precautions against it are more under the control of the individual. The voyage is almost always beneficial to the consumptive or bronchitic invalid; the cough is for the time arrested. Even if the invalid suffers from sickness, it is only a temporary suffering, and does not increase his disease. If he is so feeble as to render a sea voyage dangerous, he is unfit to travel at all, and should remain at home.

As regards *sea-sickness*, this may be in many cases entirely prevented; in others promptly cured, or greatly mitigated. I have elsewhere* written at considerable length of the treatment of nausea and vomiting from various causes. For the *prevention* of sea-sickness I employ bromide of potassium or calcium

* Treatment of Vomiting by Electricity. Archives of Electrology and Neurology, 1874. New York Medical Journal, November, 1876. Medical Record, June 22, 1878.

in full doses, half a drachm, three times a day, for about three days before the day of sailing, or enough to get the system fully under the influence of the drug at that date, as evidenced by a feeling of pleasant drowsiness. I keep this influence up by one, two or three doses a day after sailing, especially if the sea is high. Some persons prevent sickness by wearing Jobard's belt buckled as tightly around the waist or pit of the stomach as can be borne with comfort. Ladies can bear it better than gentlemen. These can be had at Tiemann & Co.'s, 67 Chatham street, New York. The invalid should, if the weather permit, keep on deck, and, if threatened with sickness, in the recumbent posture, and take the meals on deck. If he takes his meals in the saloon, he should not linger a moment after he has finished a moderate meal of *plain* food, but go in the open air and lie down if threatened with nausea.

Among the numerous *cures*, I know of none equal to electricity. A person can get a small, inexpensive Gaiffe battery for from five to ten dollars, which requires no destructive acids to run it, which any one may learn to apply moderately well very soon. A flat sponge *moistened* well or a wet napkin should be *wrapped around* the brass cylinder electrodes, not *inserted into* them, so as to furnish a large surface. One of these should be placed on the epigastrium, the other opposite, over the spine or *solar plexus*, and the latter during half the time over the seventh cervical vertebra. The electricity may be continued for half an hour or an hour in bad cases, only strong enough to give a pleasant sensation. Apomorphia in very minute doses (the homœopathic triturations furnish the most convenient form) is well worthy of trial. For sleeplessness associated with sea-sickness, chloral hydrate may be taken (in a wafer to prevent nausea) in doses of ten to fifteen grains. A stop-cock corkscrew may be put into a bottle of dry champagne; this kept in ice, and small doses taken every half hour or so, especially in debilitated subjects. By strictly observing the above precautions and remedial measures, sea-sickness may be prevented, or cured in most cases, not in all. Those who get sick upon coming in sight of the steamer, or *thinking* of the voyage, had better take to the railway.

NEW YORK, September, 1878.

Prof. E. S. Gaillard:

Dear Sir,—I should suffer to pass unnoticed the abusive review of my book, which appeared in the August number of your Journal, did it not bear the initials "E C. S," which might lead the careless reader to suppose that Dr. E C Seguin, a dignified and well-known neurologist, might be the reviewer. I deem it my duty to state that the letters "E. C. S." belong to one E. C. Spitzka, the value of whose criticisms, as a whole, may be inferred from his blundering and unsuccessful attempt to correct certain German titles at which he has taken umbrage. As to his ability at vituperation, and the reputation it is likely to bring him, the reader is referred to an editorial rebuke in the July number of the "Journal of Medical Science."

Yours very truly, ALLAN MCLANE HAMILTON, M. D.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

Stricture of the Male Urethra—Its Radical Cure. By FESSENDEN N. OTIS, M. D., Professor of Genito Urinary Diseases, College of Physicians and Surgeons, New York, etc., etc. Octavo, pp. 352. Illustrated. New York: G. P. Putnam's Sons.

Under this title we have a recent work from the pen of a distinguished authority upon a most interesting subject; one which is, and has been, engaging the surgical mind of this country, as well as that of Great Britain and the Continent, for some time past.

Dr. Otis has been for a number of years a leading investigator of urethral diseases, and anything from his pen upon this subject must, of necessity, prove most welcome to the profession at large. His original and peculiar views in relation to the measurements of the normal urethra have been creating considerable discussion among the leading authorities, and have opened up new ideas in the treatment of urethral stricture.

His investigations, together with those of others, have proved conclusively that there is a positive relation between the circumference of the penis in its flaccid condition and that of the normal urethra, thus proving each urethra to have a distinct *individuality.*

This much attained, we have a sound basis upon which to establish a rational and scientific treatment of this frequent and troublesome affliction.

His views have been, from time to time, given to the profession in a series of journal publications; and now that he has presented them in a systematic monograph, which embodies all which he has hitherto written, as well as a number of interesting papers from the pens of leading surgeons who differ from him in some essential points, and also the opinions of others who indorse his views and method of treatment, the work will be read with great interest by those who are engaged in the study and practice of this branch of the profession.

His chapters upon chronic urethral discharges, upon *strictures of large calibre,* and the influence which they exert upon gleet, will convey much useful information to the general practitioner, and a close and careful perusal of them will prove of great value in unraveling the true nature of a number of hitherto obscure affections of the genito-urinary system, such, for example, as reflex nervous troubles, chronic cystitis, spasmodic retention of urine, etc., etc.

His directions for the preparatory treatment before operations for stricture, as well as the after-attention of such cases, are instructive, and can not fail to be interesting to the busy practitioner, who has not the experience derived from a large clinical practice to direct him when such cases present for his attention.

The work is most especially valuable as showing the author's views and experience in relation to the *radical cure of urethral stricture;* a result which hitherto has not been attained, because the profession had blindly accepted the surgical dictum, that "once a stricture, always a stricture," was the rule, and without the exception; for it has been considered ample success when the immediate inconvenience of the stricture was removed,

although at the expense of dooming the patient to the life-long use of the sound to insure him a free exit for his urine. Here the credit is unquestionably due to Dr. Otis for having verified the views of Reybard, and for having systematized the treatment and perfected the cure of a malady which for a long time has been almost one of the opprobria of surgery.

In the work before us, we have the subject of dilating urethrotomy fully discussed, and the following summary, drawn from the large experience of the author, and in a great measure confirmed by the practice of others, seems to fully justify the following conclusions:

1. That the urethra is an *individuality*, and hence to obtain the true normal calibre of any urethra, it must be measured or estimated, independently of any other.

2. That the meatus urinarius is worthless as a guide to the normal urethral calibre, and that its abnormal contraction is the cause of the pouch-like dilatation of the urethra behind it, known as the *fossa navicularis*.

3. That stricture is a relative term. Hence its extent must always be estimated by comparison with the previously-ascertained normal calibre of the urethra under consideration.

4. That the slightest *abnormal* contraction of the urethra, at any point, constitutes a stricture.

5. That a stricture, in this sense, is always a point of friction, the legitimate tendency of which is to produce inflammation; and hence the slightest appreciable stricture becomes worthy of consideration. That serious trouble often results from strictures which but slightly contract the calibre of the urethra, and which do not markedly interfere with the passage of urine; and that among such troubles *spasmodic stricture*, simulating true organic stricture in every respect, is often caused by such slight contractions.

6. That stricture is *a* cause, though not the *only* cause, of gleet; and is, when present, always a cause of its persistence.

7. That true stricture always embraces the entire circumference of the urethra at *some* point.

8. That complete division of stricture at *any* point results in the *immediate disappearance* of the stricture.

9. That separation of the sundered ends of the stricture, suitably maintained until the healing of the wound, prevents the return of the stricture, and finally results in the complete absorption of the stricture-tissue.

10. That stricture is, strictly speaking, an inflammatory product, and that any acute or chronic inflammation may produce it.

11. That stricture is often present as a result of inflammation caused by *lithiasis*, *masturbation*, or *urethral laceration* (by gravel, etc.), though usually the sequel of gonorrhœa.

12. That stricture occurs most frequently in the anterior portion of the canal; and with increasing frequency when approaching the meatus, where a gonorrhœal inflammation begins the earliest, rages the hottest, and lasts the longest.

The work is handsomely issued from a well-known house in New York, and as a most valuable addition to the surgical literature of genito-urinary diseases, we heartily commend it to the profession. C. H. M.

A Case of Urinary Suppression in Yellow Fever; treated by Super-Oxygenated Air and Jaborandi. By W. Hutson Ford, M. D., of St. Louis.

On the Use of the Solid Rubber Bandage in the Treatment of Eczema and Ulcers of the Leg. By L. Duncan Bulkley, M. D., Physician to the Skin Department, Demilt Dispensary, New York, etc. New York: G. P. Putnam's Sons. 1878.

Treatment of Fracture of the Shaft of the Femur; the American Method. By Franklin Staples, M. D., of Winona, Minn. St. Paul. H. M. Smyth & Co. 1878.

On the Diet and Hygiene of Diseases of the Skin. By L. Duncan Bulkley, M. D., Fellow of the New York Academy of Medicine, etc. New York: G. P. Putnam's Sons. 1878.

Manitou, Colorado, U. S. A., its Mineral Waters and Climate. By S. Edwin Solly, M. R. C. S., England, L. S. A., London. St. Louis: John McKittrick & Co. 1878.

Eighteenth Annual Announcement of the Bellevue Hospital Medical College. Sessions of 1878–9, with the Annual Catalogue for 1877–8.

CHEMISTRY AND PHARMACY.

"Diruit, ædificat, mutat."—Hor.

CONDUCTED BY C. W. NULL, M. D., LOUISVILLE, KY.

Formulæ for Subcutaneous Injections.—From a little pamphlet published by Charles J. Powers ("Druggists' Circular and Chemical Gazette") we reprint the following formulæ, as likely to be of use in cases when it is desirable to administer medicines by the hypodermic method:

Acidum Benzoicum.—R. Acid. benzoic., 1 part; alcohol, 12 parts. Dissolve.

Aconitia.—R. Aconitia, 3 grains; water, 300 minims. Mix and filter. Each minim represents 1-100 gr. aconitia. Three to 6 minims can be injected at a dose.

Apomorphia Murias.—R. Apomorphia muriate, 3 grs.; water distilled, 300 minims. Mix and filter. Each minim represents 1-100 gr. apormorphia. Ten to 11 minims can be injected at one dose, as an emetic in opium poisoning.

Atropiæ Sulphas.—R. Atropiæ sulph., 3 grs.; water distilled, 300 minims. Mix and filter. Each minim represents 1-100 gr. atropia. 1½ to 3 minims can be injected at one dose.

Ammonia Fortior.—R. Stronger water of ammonia, 1 part; water distilled, 2 parts. Inject one-half syringe or more to overcome the toxic effect produced by bite of a venomous snake. (Halford).

Camphora.—R. Camphor, 1 part; alcohol, 12 parts. Dissolve and filter. (Rohde.)

Quiniæ, Sulphas or Murias.—R. Quinia sulphate, 15 grains; water distilled, 154 minims; acid sul. arom., q. s. Dissolve and filter. Each minim represents 1-12 grain. 5 minims to 14 minims to be injected at dose.

Chloral Hydras.—R. Chloral hydrate, 75 grains; water distilled, 75 minims. Mix and filter. Each minim represents 1 grain chloral. To be used as physicians suggest, as all cases do not bear same dose alike.

Caffeia.—R. Caffeia, 7½ grains; spirits wine, 75 minims;

water distilled, 75 minims. Mix and filter. Each minim represents 1-20 grain of remedy. 4 minims to 15 minims can be injected at a dose.

Conia.—R. Conia, 1 grain; spirits wine dilute, 60 minims; water distilled, 60 minims. Mix and filter. Each minim represents 1-120 grain of conia. 2 to 4 minims to be injected at a dose.

Curare or Woorara.—R. Woorara, 3 grains; water distilled, 300 minims. Mix and filter. Each minim represents 1-100 grain. 4 minims to 9 minims to be injected at a dose.

Extractum Opii.—R. Extract opium, aqueous, 5 grains; water, 10 minims. Mix. Each minim represents $\frac{1}{2}$ grain. 1 minim to $2\frac{1}{2}$ minims to be injected at a dose. (Lebert.)

Ergotinum.—R. Extract of ergot, 38 grains are dissolved in 114 minims dilute spirits and 114 minims glycerine. Each minim represents 38-220 or 1-6 grain. 5 minims to 12 minims can be injected at a dose. The extract can also be dissolved in an equal quantity of distilled water, and of it 1 or more minims can be used.

Hydrargyri Bichlor. Corros.—R. Corrosive sublim., $3\frac{3}{4}$ grs.; water distilled, 375 minims. Mix and filter. Each minim represents 1-100 grain. 5 minims to 10 minims are to be used at a dose.

Hydrargyri Biniodidum.—R. Mercury biniodide, $3\frac{3}{4}$ grains; potass. iodide, 45 grains; water distilled, 375 minims. Rub mercury and potass. together, adding water, then filter. Each minim represents 1-100 grain biniodide mercury. 7 minims to 10 minims used at a dose.

Potassii Iodidum.—R. Potass. iod., 75 grains; water distilled, 225 minims. Mix and filter. Each minim represents $\frac{1}{3}$ grain. 5 minims to 10 minims can be injected at a dose.

Morphiæ, Sulphas Acetas or Murias.—R. Morphia, $1\frac{1}{2}$ grain; water distilled, 75 minims. Mix and filter. Each minim represents 3-150 or 1-50 grain. $4\frac{1}{2}$ minims to $7\frac{1}{2}$ minims to be used at a dose.

Didama's Hypodermic Solution of Morphia and Atropia.—R. Morphia sulph., 24 grains; atropia sulph., 1 grain; oil bitter almonds, 1 drop; water, 2 ounces. Mix and filter. 10

minims contain ¼ grain morph. and 1-96 grain atropia. These amounts have been found by experience to balance each other, so that the full anodyne effect of the morph. is secured without nausea. The oil of bitter almonds prevents all muddiness.

Nicotia.—R. Nicotia, ½ grain; water distilled, 2 drachms. 1 minim represents 1-240 grain. 4 minims, representing 1-60 grain, is a suitable dose.

Spiritus Etheris.—R. 30 to 40 drops (divided among the 4 extremities) as an excitant.

Strychniæ Sulphas or Nitras.—R. Strychnia sulph., 2 grains; water distilled, 1 ounce. Mix. Heat in a test tube until all crystals disappear, or preferably to this triturate in mortar and add water. 5 minims represent 1-48 grain.

Tinctura Cannabis Indicæ.—R. Tinct. cannab. ind., water distilled, equal parts. Use 4 minims to 11 minims. (Eutenberg.)

Tinctura Opii.—R. Tinct. opii, 3 minims to 11 minims.

Veratria.—R. Veratria, ½ grain; water, 50 minims; dil. alcohol, 50 minims. Mix. 1 minim represents 1-200 grain. 4 minims to 10 minims. Subcutaneous injections are also employed to produce a local irritation at any point in the perineum, and thereby act as a revulsive (and thus produce a conducting away). Parenchymatous substitution according to Luton. Luton recommends for this purpose common salt, alcohol, tincture of iodine, tincture of cantharides, sulphate of copper, argentic nitrate. The hypodermic method has been employed of late for the destruction of new formations. The following remedies are used in producing these results:

Acid Acetic.—R. Acid acetic, 1 part; water, 5 parts. Inject 30 drops into a swelling. (Broadbent.)

Argenti Nitras.—R. Nitrate of silver, 30 grains; water distilled, ½ ounce. Each minim represents 1-8 grain nitrate of silver. Immediately after some of the silver solution has been injected into the swelling Thiersch recommends a solution of common salt to be injected.

Tinctura Iodinii.—R. Tr. iodine, 1 part; water, 50 parts. Or 3 to 6 drops tinct. injected undiluted, and even more in case of struma and chronic swelling of the lymph glands (Lücke.) In place of tincture iodine we can employ a solution of iodine

and iodide potassium, which is less painful. Take of iodine 7 grains; iodide potassium, 35 grains; water, 770 grains. The latest injections are against hypertrophia tonsillarum under the mucous membrane. Either a solution of iodide of potash, 1 to 50 (Jakenbouitz), or iodine in iodide of potass. Iodine, 2 grains; iodide potash, 38 grains; water, 463 grains. (Rumbold.) A solution of iodine in glycerine; 1 part or 2 parts iodine to 100 parts glycerine. (B. Fränkel.) Pepsin in solution has been used by Thiersch and Nussbaum more as experiments.

Spiritus Vini.—R. $\frac{1}{4}$ to $\frac{1}{2}$ syringe against struma. (Schwabe.) The subcutaneous injections, according to the latest experiments of Menzel and Perco, may probably be used for the incorporation of nourishment, since fats, milk, and the yolks of eggs are absorbed by the subcutaneous tissue.

Lebon's Perfumed Carbolic Acid.—In this preparation the disagreeable odor of phenol is simply masked by the use of oil of lemon, which has no prejudicial action upon the antiseptic properties of phenol. The recipe is no longer a secret, having been made known in the "Moniteur Scientifique" of Paris. It consists of the following proportions: Carbolic acid, 1 part; oil of lemon, 3 parts; alcohol at 36°, 100 parts. The mixture is quite perfect, and appears to be very stable. The odor of the oil is alone appreciable.

Bromate of Potash in Cardiac Affections.—Dr. Angrisani, in an interesting article on this subject, gives the following conclusions:

1. Bromate of potash has a depressing action on the vaso-motor centres and on the cardiac plexus.

2. This effect is produced in the vaso-motor centres by a mode of action which is quite peculiar to it, and which we do not understand, and not because the bromate acts on the smooth fibres of the capillaries. The diminution of the lumina of the capillaries may depend simply on the extension of the action which this salt exerts on the centres and the vaso-motor nerves alone in physiological experiments.

3. The bromate has no action on the muscular fibres of the

heart like digitalis, and the latter has no action on the arteries.

4. The bromate is the most suitable medicine for correcting the functional anomalies of the heart, such as frequency, intermittence, arhythm, etc., whatever may be the condition of the miocardium.

5. It modifies rapidly and advantageously angina pectoris and palpitations when they are simply neuroses. In those cases which depend on profound anatomic pathological changes of the heart and vessels or on compression, the bromate is still capable of producing an amelioration which is more or less durable.—*From Lo Sperimentale, in New York Journal of Medicine.*

Purification of Carbonic Acid.—Artificial mineral waters, says the "Druggists' Circular," which are prepared with the aid of carbonic acid derived from limestone or magnesian limestone must be perfectly devoid of that peculiar odor which is evolved with the carbonic acid disengaged by acids from the natural rocks. P. Pfeiffer, a German pharmaceutist, says that this can be effectually done by causing the carbonic acid gas to pass through olive oil, or through tubes filled with lumps of pumice stone impregnated with the oil. A mere passage through washing bottles containing water is not sufficient.

To Conceal the Taste of Quinia.—Dr. S. Ashurst says that if cinchona be mixed in the proportion of one grain of the alkaloid to four grains of sugar of milk, and one-tenth of a grain of bicarbonate of soda, it will leave no bitter taste in the mouth. The mixture may be taken dry or dissolved in water.

Coffee as an Antidote to Strychnia.—Dr. Attilio Lelli, having met with a case in which a large dose of strychnia was administered in coffee without fatal consequences, was led to institute some experiments to determine whether it possessed an anti-toxic power against this drug. The animals employed were rabbits, and by comparative trials he found that a dose of five centigrammes proved fatal in a short space of time; when

the same or a larger dose was given in a very strong infusion of coffee, he found that the coffee either acted as a complete antidote in preventing the poisonous effects of the strychnia, or that it materially diminished the violence of its action.—*Lancet.*

MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

To Physicians and Others Residing in the Cities and Towns Visited by the Yellow Fever.—Dr. J. M. Woodworth has issued the following circular, under date of October 10th: Acting upon the advice of members of the American Public Health Association, the Surgeon-General of the Marine Hospital Service has organized a Commission to gather and record all important *facts* relating to the commencement and spread of the present epidemic of yellow fever, with the view of establishing truths upon which the theory and practice of prevention of future epidemics may rest.

The gentlemen composing the Commission—Professor Bemiss, of New Orleans, Dr. Cochran, of Mobile, and Professor Howard, of Baltimore—have already commenced their work in New Orleans, and will visit the principal places in which the yellow fever has prevailed.

The cordial coöperation of all who have facts to communicate bearing upon the subject under investigation is earnestly solicited for the Commission.

A preliminary report of the facts, gathered up to the 19th day of November next, will be presented to the American Public Health Association, which will convene on that day in the city of Richmond to discuss the report, and to advise the best course to be pursued in concluding the labors of the Commission.

It is not intended to terminate the investigation on the 19th of November, but it is desirable that those interested in public hygiene, in all parts of our country, should meet in council

prior to the assembling of Congress, as it is generally believed that legislative action will be promptly taken in reference to preventing future epidemics. The agitation of the public mind upon this important subject is proper and commendable, but herein lies the peril of hasty or not fully-matured legislation, and it is hoped that by the action proposed, Congress may have the benefit of the advice of the representative men of sanitary science.

The invitation of the officers and executive committee of the American Public Health Association, extended for the Richmond meeting, is to "medical and sanitary authorities and other citizens who seek to promote the public health." This will afford an opportunity for all who desire to advise in reference to the work in hand.

If the voluntary contributions of money for the expenses of the Commission are sufficient, it is intended to add to the Commission a Sanitary Engineer, a Microscopist, and a Meteorologist.

The first step in the investigation is, as already stated, an examination into the causes of the commencement and spread of the epidemic, now being prosecuted by the Commission.

The second step is the study of the natural history of the disease itself, which will be undertaken if the contributions of money warrant.

It is believed that the study of the treatment of the disease should not be added to the labors of the Commission. The contributions of experience in this direction will doubtless be numerous, and may be properly left to the medical journals of the country and to individual reports.

Remarkable Gas Wells in Ohio.—A correspondent of the "Cleveland Leader" says that the natural gas wells of East Liverpool, Ohio, form one of the seven wonders of the world. They are situated in and around the city, and give it a continual supply of the finest light. The gas is almost as free as the air. It costs practically nothing, and forms the illuminator and heater of the town. The city is lighted by it, and the street lamps blaze away at noonday as well as at midnight. It costs

nothing to let them burn, and it takes trouble to put them out. Its light is not the flickering mockery of poorly-manufactured gas, but a flame which proximates in its brilliancy that of the electric light. Almost the entire fuel used in the town is this gas. It is conducted into the grates and stoves in pipes, and by it all the cooking and heating are done. It is also used in furnishing steam power for many of the largest pottery and iron-stone china manufacturing establishments, twenty-two of which are in operation and busily engaged, employing over two thousand hands, and which it is considered justly entitles East Liverpool to be designated as "the ceramic city" of America. Regarding the duration of the supply from these wells, it is stated that the first well discovered now burns as brightly as when it was first opened, and for the past twenty years has never flagged in its brilliancy, and none of those now in operation have ever shown any signs of giving out. For years Liverpool used manufactured gas, never dreaming of the rich supply that was wasting away daily under its very feet. The poor quality of the manufactured product induced the opening of the first well in 1859. This well, which is four hundred and fifty feet deep, has been furnishing fuel and light to several houses, producing the steam for a large engine, and burning pottery kilns every day for over twenty years.

Lead Salts and Ammonia.—Dr. Méhu, in a paper recently read before the French National Academy of Medicine ("Jour. Pharm. Chem."), announces that the use of lead salts for the removal of the pigmentary matter from urine, bile, fæces, and other animal and vegetable secretions may be advantageously replaced by that of sulphate of ammonia. Usually it is necessary to first acidify the liquid to be treated with sulphuric acid; the sulphate of ammonia then being added to saturation precipitates the whole of the coloring matter, which can be separated by filtration. In like manner, sulphate of ammonia added to milk causes the complete separation of the albumen and butter, leaving the whey limpid and colorless and suited for a saccharimetric examination. In the case of milk the previous addition of sulphuric acid is not necessary, but a slight acidification ren-

ders the coägulum more compact and facilitates the filtration. Sulphate of ammonia does not precipitate gum, sugar, or tannin; in fact, Dr. Méhu has used it to separate the chlorophyl from a solution of commercial tannin.

Influence of Gaslight on the Eye.—The German Minister of Instruction, in a recent report on the influence of gaslight on the eye, concludes that no evil results follow a moderate use of gas, if the direct action of the yellow flame on the eye is prevented. Grave objections he makes to the use of zinc or lead shades, most evils affecting the eye being traceable to them. Their use, it is said, inevitably tends to blindness or inflammation, and other harmful effects. The milky-white glass shade is the best, as it distributes the light and has a grateful effect on the eye. The burner should not be too close to the head, as congestion of the forehead and headaches result from the radiated heat. The glass plate below the gas is especially useful for the purpose, as it causes an equal distribution of the light—necessary where a number are working at one burner—prevents the radiation of heat, and tends to a steady illumination by shielding the flames from currents of air. In cases of highly inflamed eyes, he recommends dark-blue globes.—*Scientific Amer.*

Treatment of Syphilis without Mercury.—Dr. Boileau stated before the British Medical Association that for several years he had not only treated, but he believed cured, cases of syphilis among soldiers without the use of mercury. His principle had been to avoid mercury as much as possible; he treated most of the cases without administering any form of that remedy, and very rarely resorted to fumigation or inunction. He believed, however, that it would have been better to have discarded all remedies having mercury in their composition, although he occasionally used them with the hope of obtaining good local results. He believed that in the cases where mercury was locally applied, the actual amount absorbed into the system must have been very slight. His treatment had consisted in the frequent employment of hot-water baths, confinement to bed, scrupulous attention to cleanliness, full hospital

diet (generally with a pint of the best ale daily), and the internal administration of iodide of potash, Dover's powders, nitrate of potash, chlorate of potash, etc. Several illustrative cases were briefly reported. In reply to some objections raised against his paper, Dr. Boileau said that his cases were matters of fact, and the results did not admit of discussion. He admitted that his cases were under exceptionally favorable circumstances. He saw no reason why he should give mercury if he could do without it. Local sores certainly healed without its use, and all his cases were, as far as he knew, at present healthy.—*Brit. Med. Jour.*

The Pathology of Colles' Fracture.—Dr. Hector Cameron, of Glasgow ("Glasgow Medical Journal"), has been so fortunate as twice to have had the opportunity of examining a recent specimen of the fracture after death. In the first, the fracture, although transverse, passes obliquely from above downward and forward, so that while at the anterior aspect of the bone the line is not more than a quarter of an inch from the articular surface, on the posterior, the distance is increased to about an inch. There is some comminution of the lower fragment, and the broken surface of the upper is extremely rough and denticulated. This very irregular and notched character of the fractured surface appears to be usual (Malgaigne), and is of interest in so far as it may cause difficulty in the reduction of the displacement. In this particular instance, although it can not be said that there is any impaction, a toothed projection on the long fragment so locks the other fragment in its new position upward and backward, that it would be impossible to reduce it except by great force. In the second specimen there is a transverse fracture about three-quarters of an inch above the articular surface of the bone. In front the break is hardly complete, the periosteum holding the fragments together, but allowing them to bend at an angle there, as upon a hinge, so that the lower fragment is, as usual, tilted upward and backward, and has the direction of its articular surface so altered that it looks upward, backward, and outward. On the posterior aspect not only is the fracture complete, but the dense outer

covering of the upper fragment is driven firmly into the substance of the lower, splitting it like a wedge into three fragments, which, however, hold closely and securely together. The impaction is complete and irremediable. Although firm extension improves matters, it does not unlock this connection between the two fragments on the back of the bone.—*Med. and Surg. Rep.*

Gas Light.—At the British Association the report on the best means of developing light from coal gas, by Dr. Wallace, of Glasgow, was read by Dr. Wills, F. R. S. He approved the use of cannel rather than common gas on account of its comparatively small influence on the atmosphere of apartments, and the smaller proportion of sulphur it contains. He also recommended that gas be formed at low pressure, and that district governors be used to ascertain the pressure at different levels in towns. He mentioned the fact that the average illuminating power of gas delivered by Scotch companies was twenty-six candles, whereas in London it is only sixteen, and in the chief cities and towns of England and Ireland only fourteen. The use of globes around light reduced the quantity 10 per cent. *Scientific Amer.*

A Point in the Diagnosis of Spinal Sclerosis.—Dr. T. Buzzard observes that if a healthy man sit with one knee-joint resting upon the other (a very common attitude), and the ligamentum patellæ of the supported leg be smartly struck just below the knee-cap with the side of the hand, a sudden contraction takes place of the quadriceps femoris muscle (of which the ligamentum patellæ represent the tendon), and the foot is consequently jerked upwards in a degree which varies in different individuals. Now in confirmed examples of locomotor ataxy this reäction does not take place; no matter on what part of this ligament below the knee-cap, or with what force the blow is struck, the foot hangs motionless. Dr. Buzzard shows that the contraction of the muscle is not a reflex from the skin, since if this be raised and pinched or otherwise be stimulated, no contraction occurs, whilst if it be frozen or anæsthetized the sharp

blow still produces contraction. Tschirijew found that division of the cord in guinea pigs above the place of exit of the sixth pair of lumbar nerves caused the phenomenon to disappear. Dr. Buzzard attributes it to some excitation of the nervous fibres belonging to the tendon.—*Lancet.*

Use of Digitalis in Disease of the Cardiac Valves.—Dr. F. A. Hoffmann, of Dorpat, says ("St. Petersburger Med. Wochenschrift") that, while the diagnosis of a disease of the heart is generally easy, it is often difficult to recognize the stage of the disease and to judge of the functional power of the heart. The indications of congestion are not to be depended on; patients with cyanosis, enlargement of the liver, ascites, and anasarca, are often improved by a short course of treatment, and feel quite well for some months; while others, following just the same symptoms, are treated the same way in vain, and soon die. Just as little are the arterial tension and the heart's impulse to be depended on; both may be sufficient even until death. Even the distinctness of the heart's sound—apart from the prognostically favorable strengthening of the second pulmonary sound and the cessation of the mitral murmur shortly before death—gives no aid.

Irregularity of the heart's action just becomes a certain sign when the regularity of the heart stroke can no longer be restored by digitalis. In order to ascertain this, it is necessary to possess a preparation of digitalis of which the action has been thoroughly proved, and to administer a dose of it subcutaneously. In this way we obtain within twelve hours that information which the internal administration of the drug, or of infusion of digitalis, does not furnish for several days, and often not at all.

This experiment need not be made in cases where the right heart is enlarged towards the left beyond the nipple-line; for in this stage there is a condition of passive dilatation, in which digitalis can no longer do good.—*London Med. Record.*

Application of the Shellac Cloth or Poroplastic Spinal Jacket. Mr. J. C. Hutchinson, of the Brooklyn Orthopædic Infirmary, recommends the following material and mode of application in

cases of spinal caries, and of diseases of the hip and knee-joint. The felt, or, as it is called, shellac cloth, should be of a somewhat heavier kind than that employed by hatters. Then the patient, being suspended in a Sayre's swing, the following measurements should be taken: 1. From a point one and a half inches to one side of the linea alba, on a line with the anterior superior spinous process of the ilium, around the back of the pelvis, to a corresponding point on the opposite side. 2. From a point one and a half inch to one side of the middle of the sternum, around the back of the thorax, to a corresponding point on the opposite side. These measurements will leave a space in front for lacing. 3. From the seventh cervical vertebra to the top of the sacrum; slits are cut in the lower edge of the splint an inch long and two or three inches apart, so as to allow the lower part to mould itself more accurately to the pelvis, and thus get a better base of support. It should also be cut away under the arms. The chest is now covered by a well-fitting woollen shirt or flannel bandage, the patient being suspended. The felt, made pliable by dry heat or steaming, or by immersion in very hot water, is quickly applied, and covered with a bandage from below upwards very firmly, so as to mould it to all the inequalities of the surface. The splint almost immediately regains its inflexibility. It may then be removed, trimmed up, and holes punched along the front edges and reäpplied. Two brace straps may be attached to the top edge of the splint, which cross over the shoulders and buckle in front. The splint may be made more comfortable in hot weather by perforating here and there with a punch. The splint for a child weighs only eight to twelve ounces, very much lighter than a plaster-of-Paris jacket, is comfortable, more cleanly, and more easily applied, while it fulfills all indications.—*Lancet.*

Spiegel Iron.—In German, "Spiegeleisen," which means "mirror iron," is thus called because its fracture shows flat shining surfaces, reflecting light like pieces of mirrors. It is of all irons the richest in carbon, and also the most brittle and hardest—no steel tool will make an impression on it. It is very fusible, and it is principally used at present in the manu-

facture of Bessemer steel. In this process most of the impurities are removed from the melted mass by forcibly blowing air through it, which burns them out, but also too much of the carbon, so that at the last stage of the process the iron is reduced to a condition of being almost equivalent to wrought iron, and can not be poured, the temperature, high as it is, being insufficient to keep wrought iron in the liquid state. Melted spiegel iron is then introduced, which at once combines with the mass under the evolution of a large flame; the iron becomes then at once as liquid as water, and is poured in the moulds to make ingots. Spiegel iron is also used to make safes burglar proof; as an interior filling for this purpose it is cast between sheet-iron lining. It also possesses the curious property of being less magnetic than any other kinds of iron; it is less attracted by the magnet than other kinds of iron, and strongly resists efforts to become magnetized, which is contrary to the property possessed by wrought iron, which takes magnetism easily, but also loses it easily; while steel takes it with some resistance, but when once it is magnetized it holds it. We have a spiegel iron in this country; it is made from the New Jersey Franklinite ore, and was at first called Franklinite iron. It has commenced to be universally used in place of the spiegel iron, thus far imported from Germany, and will probably supersede it, if it has not already done so.—*Manuf. and Builder.*

The Influence of Tobacco upon the Development of Diseases of the Ear and Deafness.—Tobacco should be classed along with alcohol. Like the latter, it has little effect upon many people, in moderate quantities; it may even be of advantage sometimes, and the physician can and ought at times to prescribe and advise its use; but to some even in small doses it excites functional trouble, as I have often been able to establish in the practice of diseases of the ear.

I often recognize cases of deafness that are dependent upon no other cause, and I desire to call attention to this point.

Few works upon otology mention the injurious effects of tobacco, and authors who have pointed them out have not done so in a sufficiently explicit manner.

Tiquet devotes a chapter to the otitis of smokers and drinkers, but almost exclusively as regards its influence upon the nervous system.

I desire to point out its effects upon the naso-pharyngeal and auricular mucous membrane; upon the organs of the tympanic cavity; upon the muscles of the pharynx and soft palate; upon the nerves of this region, and the auditory nerve.

The injurious effects that I have observed have been from smoking tobacco.

Tobacco used for chewing ought to have the same deleterious effects, though while its consumption is extensive, its use is not so widespread.

The author thinks too that the irritation of the chewing tobacco is more localized, and that its irritative effects are more transient than the smoke, which spreads over the entire naso-pharyngeal mucous membrane, even entering the eustachian tubes and middle ear, along with the air. Smoke causes a continuous irritation so long as one smokes, which is usually from half an hour to an hour. Instead of provoking an abundant secretion like chewing, it causes a dryness of the mucous membrane with which it comes in contact; true smokers expectorate little or not at all; when they do, it is the result of the excitement of the secretion from the mouth. Cigarette smokers who expel the smoke through the nose, send it directly against the eustachian tubes, and if these are patulous, into the middle ear also. Tobacco smoke contains a great many solid particles; these are deposited on the moist walls with which they come in contact; a fact which the odor and taste in the smoker prove.

The author asks if we have not here permanent causes of irritation and intoxication as we have in the dust of lead and arsenic, etc. The angina of smokers is characterized by the swelling, the roughness, the dryness and the insensibility of the mucous membrane of the palate and pharynx. The swelling is uniformly spread, being particularly marked upon the uvula, which is greatly enlarged and sometimes deviated to the right or left.

The mucous membrane is as red as in the acute phlegmasiæ,

but presents a duller color; a congestive rather than an inflammatory red.

The dryness of the throat is apparent, the epithelial lining is smooth and glistening.

The patients complain of no pain, no inconvenience, and invariably say they have no soreness of throat; it is evident, however, that the state described has existed for a long time; they do not come for relief till subjective phenomena present themselves. These are tinnitus and deafness. (The objective symptoms and the condition of the parts, while given at length by the author are those of chronic inflammation of the middle ear). The author regards the condition of the mucous membrane as congestive rather than inflammatory, since such patients do not complain of pain, nor of any throat symptoms, nor is the nasal secretion increased. He thinks the insensibility of the throat is due to the narcotic action of the tobacco.—*Ladreit de Lacharriere-Anna. des Malad. de l'Orielle.*

Homœopathic Doses of Lovely Woman.—The following delicious bit of satire is from the "New York Times." It is needless to remark that Western Homœopathists are opposed to high dilutions (or attenuations) of this particular article of the materia medica; they prefer it in massive doses:

"It has been discovered of late years that many habits and conditions of the body and mind are really diseases. First it was ascertained that a tendency on the part of the excited and disappointed woman to howl and throw things is not a manifestation of bad temper, but a disease called hysteria. Then drunkenness, thieving and other unpleasant habits were found to be diseases with difficult and painful Greek names. The very latest discovery of this kind has been made by the distinguished German homœopathist, Dr. Steinerkopf, whose recent monograph on "Gynaia, its Symptoms and Treatment," is attracting so much attention in medical circles. The eminent physician shows very conclusively that those peculiarities of character which cause certain men to be called effeminate are symptoms which constitute a disease called by him "Gynaia." The patient is timid, excitable, averse to tobacco and dogs, and,

though apparently without much energy is, nevertheless, wonderfully persistent in clinging to his own views and compelling other men to yield to his wishes and whims. "Gynaia," remarks Dr. Steinerkopf, "may be briefly defined as the simulated existence of feminine moral qualities in the person of a man." With the existence of the disease we are all familiar, though it has never hitherto occurred to any man that effeminacy was a real disease. The fact that it is a disease is, however, so clearly shown by Dr. Steinerkopf that it must be hereafter conceded. Being a firm believer not only in the universality of the law *similia similibus curantur*, but also in the potency of the very highest dilutions, Dr. Steinerkopf could not long be in any doubt as to the proper remedy for "gynaia." The various symptoms were by him finally classified as different manifestations of effeminacy, or womanliness, and hence the remedy indicated womanliness itself in extremely attenuated doses. Thus far all was plain and simple, but how to attain a sufficiently high dilution of womanliness was the next problem. Fortunately a would-be sarcastic sentence contained in one of the medical journals of the old school furnished Dr. Steinerkopf with an invaluable hint. The journal in question said of the fiftieth dilution of *lachesis*. "This dilution is equal to one drop of the tincture of the alleged drug diluted with the whole Atlantic Ocean." Reading these words, Dr. Steinerkopf at once saw his way. The Atlantic Ocean was what he needed. Could he dilute the whole Atlantic he would have a dilution at least as high as the fiftieth of any other drug, and probably quite as efficacious. No sooner had this brilliant idea flashed across the Doctor's brain than he filled his pockets with phials and started for the nearest watering-place. Day after day he was observed walking on the beach with an anxious air of expectation. It was not for several days that he was able to find what he sought, a girl bathing alone and enjoying the monopoly of the ocean. Tremulously seizing his watch in one hand and a glass vase in another, he waited for ten minutes to elapse, and then rushing into the surf regardless of his shoes and trousers, he scooped up a gallon of water and bore it triumphantly to his lodgings. He had now the required high dilution of girl,

but it was combined with other undesirable elements. He therefore removed with great care the sodium, iodine, magnesia, orange peel, old boots and other chemical substances which are found in sea-water. Thus, after much labor he prepared a chemically pure remedy, which he bottled and labeled "*Puella Domestica 50th.*" He had his remedy at last, and it only remained to try its efficacy. Following the example of the devoted Hahnemann, he proceeded to prove the new drug upon himself. A large part of his monograph—which, by the way, ought to be translated and republished here without delay—is occupied with these drug-provings, and they are wonderfully interesting. Four doses taken at intervals of six hours produced in the Doctor's mind a vague longing to wear bonnets, and an unconquerable tendency to sit with one foot doubled under him. Two doses taken at an interval of eight hours produced a distinct desire for cats, an abnormal interest in the clothing of casual ladies who passed under the Doctor's window, a profound reverence for the clergy, and dread lest an ancient horse-pistol, which had hung for thirty years unloaded in the Doctor's office, should "go off" and kill somebody. There is no room for doubt in the mind of Dr. Steinerkopf that, could he have taken little enough of this remedy, it would have transformed him morally and mentally into the exact image of the typical woman. The new drug was subsequently used by its distinguished discoverer in his practice, and produced the most miraculous cures of the confirmed cases of gynaia. In fact, there are few drugs in the whole homœopathic materia medica which have so uniformly produced such astonishing cures, and that it is a true specific for gynaia, no matter how long and how obstinately the disease may have existed in a chronic form, is nearly certain. It should be added that the Doctor asserts that no harm can result to healthy persons from bathing at watering places, since it is only at exceptional moments there is a sufficiently small quantity of girl in the Atlantic to form a dilution high enough to possess any medical virtue.

Action of Morphia on the Heart.—MM. P. Picard and Rebatel, at the meeting of the Paris Société de Biologie, on

May 4th, called attention to the action of the salts of morphia on the heart ("Gazette Méd. de Paris"). M. Picard has already pointed out some of the phenomena following the injection of chlorhydrate of morphia in the dog, especially the contraction of the pupil and dilation of the small vessels. He infers that the salts of morphia produce both phenomena by paralyzing the sympathetic nerve. He now publishes the sequel of his researches, having further to note the coïncident fall of the mean blood pressure and retardation of the action of the heart. These facts are easily verified by placing a manometer in connection with an artery, and noting the blood pressure and rate of the heart's beats before and after the injection of morphia. It must be observed that the retardation of the heart's action occurs in spite of the reduced blood pressure; if the fall of pressure occurred alone, a peripheral action of the vessels would explain it, but then there would be at the same time accelerated action of the heart so that only a direct agency affecting the heart can explain this phenomenon. The cause, then, must be stimulation of the inhibitory or paralysis of the motor nerves (leaving aside as inadmissible the action of morphia on the cardiac fibres). The question thus put is easily solved by the following experiment: Cut the pneumo-gastric nerves of a dog, and after a few minutes count the beats of the heart, then inject morphia; and it will be found that diminution of the action of the heart is still produced, notwithstanding the section of the inhibitory nerves. This experiment throws over the first and prepares us to admit the second hypothesis, namely, that morphia paralyzes the motor nerves of the heart, as it does the sympathetic nerves of the vessels and of the iris.—*Lond. Med. Record.*

A Remarkable Case of Sphacelation of the Stomach.—Dr. Dujardin Beaumetz lately presented the notes of this case to the Medical Society of Paris ("L'Union Médicale"). The patient, aged forty-seven, entered his wards on October 19. Five days before, whilst in excellent health, and without appreciable cause, he had had an hæmatemesis, accompanied by acute pains in the stomach. Examination revealed no epigastric tumor. He bore

milk diet very well, and without vomiting. The patient spoke of a stomatitis from which he was then suffering, but said that every year about that time he was troubled with aphthous sore mouth. Dr. Dujardin Beaumetz did not believe that this affection was similar to his previous attacks, and did not know to what the ulcerations of the lips, the under surface of the tongue, the uvula, and even the borders of the epiglottis were to be ascribed.

On October 28th, the patient, who up to that time was progressing well, hardly complaining of any pain, never having vomited, and demanding solid nourishment, died suddenly, after having experienced an acute pain in the stomach, and ejected a few spoonfuls of blood.

At the necropsy, Dr. Dujardin Beaumetz found almost the entire stomach, the pyloric region excepted, sphacelated through all its thickness, and transformed into a soft eschar, which occupied not only the stomach, but also the diaphragm and omentum. On removing this mass, the lungs, liver, spleen, and intestines were exposed to view. In presence of such destruction, the idea of simple ulcer had to be put aside, and the entrance into the stomach of a caustic liquid had to be admitted. This post-mortem diagnosis explained perfectly the peculiar sore mouth. After closely questioning his wife, it was discovered that he had been very despondent from want of work, and that he feared poverty for his wife and children. On the 14th he had gone to the water-closet, and on coming out he fell almost inanimate to the ground, crying in haste for water to quench the burning in his stomach. Thus this patient concealed from every one his attempt at suicide, and was able during fourteen days to preserve the appearance of health and the integrity of the digestive functions, while the greater portion of the walls of the stomach was destroyed, and succumbed only on the separation of the slough.—*Ibid.*

Auscultatory Phenomena of the Arteries.—Dr. Senator ("Berliner Klinische Wochenschrift") draws special attention to the pathological conditions under which the heart's sounds may be heard in the peripheral arteries. These are insufficiency

of the aortic valves, with dilated and hypertrophied left ventricle; pure insufficiency of the mitral valve; perhaps pure patency of the ductus Botalli. Then cases in which the arterial system is relaxed, but the heart's muscle acts strongly (anæmia, chlorosis, fever, stenosis of the aortic or mitral valves, with hypertrophy of the left heart). After these come cases of great obstruction at the origin of the aorta, general increased tension of the middle-sized arteries, or congenital narrowing of the arteries, if the left ventricle at the same time is degenerated and little capable of performing its function. The pathogenetic condition he considers to be such a state of the arterial wall as shall enable it to be set in vibration. He recommends the solid stethoscope as making the sounds more audible in some cases. *Ibid.*

Tuberculosis of the Eye.—All the vascular tissues of the eyeball have now been found to be the seat of tubercle, either in the form of a primary growth rapidly caseating and comparable to primary tuberculosis of the kidney or lung, or else (and this is the more common) in the form of miliary granulation, part of a general outbreak of acute miliary tuberculosis. In the choroid both these forms have been described, the first named being known as "tuberculous choroiditis," as distinguished from miliary tuberculosis of the choroid. In an instance of the former variety recorded by Hirschberg there was nearly complete loss of vision in the left eye; the sclerotic was reddened and œdematous, the cornea hazy, the retinal veins greatly dilated, scattered retinal hæmorrhages, and a white diffuse color of the fundus of the eye due to the infiltration of the choroid. The right eye was unaffected. On dissection, a grayish mass, about three millimetres in diameter, surrounded the optic papillæ, being seated in the choroid, and extending to the sclerotic. It was composed of aggregations of yellow caseous tubercles. Many cases of secondary miliary tubercle of the choroid have been recorded. A case of primary tubercle of the retina has been observed by Manfredi, and of tuberculosis of that membrane secondary to tubercular growth on the iris, by Perth. Tubercle of the iris is less rare than that of the

retina, and conjunctival tubercle has also been described. One of the most recent instances is recorded by Walb. It was a case in which a contused wound of the left eye, in a child a year and a half old, seems to have determined the tubercular growth. Eight weeks after the accident (the first effects of which were simple and transitory) the mucous membrane of the eyelids had become thickened and injected, and covered here and there by small whitish-yellow caseous nodules. There was much muco-purulent secretion. Microscopically the nodular growths proved to be thickenings of the connective tissue around miliary tubercle.—*Lancet.*

Treatment of Nævus.—Mr. C. G. Wheelhouse, Senior Surgeon to the Leeds General Infirmary, in his Address in Surgery at the recent meeting of the British Medical Association, spoke of the treatment of nævus pursued at the Leeds Infirmary, where, for some time past, the surgeons have made this subject a matter of special study. He said: "Some years ago Mr. Teale having satisfied himself that, in many cases, the mass of a nævus was so surrounded by condensed connective tissue as to be practically encapsulated, set himself earnestly to work to ascertain whether it was not possible, by careful and deliberate dissection, to enucleate such growths. Setting aside the rule that, in excising a nævus, the knife must travel wide of the diseased structures, and pass only through surrounding healthy tissues, I have seen Mr. Teale, with the utmost deliberation, dissect out from their immediate bed such nævi as these, which by his kind permission I am enabled to show you, and remove them even from dangerous regions, and from subjects of the tenderest age. As the result of these operations, we have also further learned another lesson of great value, viz., that they are applicable not to subcutaneous nævi only, but even to such as have already involved the skin; and that, in removing them, it is not necessary to sacrifice the skin by which they are covered, simply because it is nævoid or traversed by a network of diseased vessels. These, Mr. Teale has found, will shrink and completely disappear under the influence of after-cicatricial contraction, and such skin is ultimately restored to a natural condition."—*Brit. Med. Jour.*

Regeneration of Nerves.—Dr. Gluck ("Virchow's Archiv.") has recently conducted a series of experiments with reference to the healing of nerves after they have been cut. The sciatic nerve of fowls and the pneumogastric of rabbits were exposed and cut through, the results of the operation depending upon the subsequent relation of the cut ends to each other. Immediately after the section was made the nerve fibres projected beyond the retracted sheath, and the myeline escaped. The cut ends were united during the next few days by a grayish-white translucent tissue. If a considerable portion (0.4 inch or more) of the nerve was removed, the intervening gray tissue became converted into a dense fibrous callus, no regeneration of the nerves occurred, permanent paralysis resulted, and the animals died during the subsequent five months. When, however, the cut ends were closely united, without the removal of a portion of the nerve, the results were quite different, being the more favorable the less the displacement. In certain cases where the nerve was simply perforated, longitudinal rows of fusiform cells, surrounded by abundant homogeneous intercellular substance, were found within seventy-two hours after the operation. These bridged over the interval between the cut ends, sometimes extending from a central to a peripheral fibre. After eight days the ends were united by non-medullated nerve fibres, which slowly and gradually became thicker. When the nerve was wholly cut across, and the ends united by sutures, the healing process took place in a similar manner, more time being required. Within eighty hours after the operation the wound was closed by a gray granulating tissue, in which, within a fortnight, spindle cells arose, apparently from the nuclei of the neurilemma, and served to unite the cut axial fibres. A differentiation into axis-cylinder and myeline apparently took place later within these cells. The author considers that the newly-formed fibres arise from these large granular spindle cells, which are to be regarded as of new formation rather than as outgrowths from preëxisting fibres. They resemble ganglion cells rather than those of connective tissue.

The results of the histological examination were confirmed by physiological experiment, the time of the return of the func-

tion to the nerve trunks corresponding with the appearances observed under the microscope.—*Lond. Med. Record.*

Changes in the Medulla of the Long Bones, when Inflammation is Excited Experimentally in one of them.—In the course of his investigations on the experimentally-excited inflammation of the bones, Professor Busch, of Berlin, was struck with the fact that the changes, in some cases, were not confined to the bones operated on, but that, on the contrary, the medulla of all the long bones was more or less affected. The changes presented all degrees of variation, from simple hyperæmia of the fatty marrow to complete transformation of the same into red (lymphoid) marrow. They were most marked when the inflammatory irritant employed was sufficiently intense in its action to cause mortification and to prove fatal inside of a week. When the inflammatory reäction was not so intense, and the dogs were not killed until the end of six or eight weeks, the bones not operated on usually presented no change.

The changes were not equally intense in all the uninjured long bones. They were invariably most marked in the humerus, and next in the femur; the tibia, radius, and ulna presented much more resistance to the morbid process. In the highest grades of the change, the marrow was fluid, and all trace of fat had disappeared. No blood-vessels even could be found in the portions removed for examination; it seemed as if the blood had circulated not in closed canals, but in cavernous spaces. The field of the microscope was filled in about equal proportions with red-blood corpuscles, and with round or jagged colorless cells, each of which possessed a large, round nucleus. Nucleated red-blood corpuscles were absent, or present only in very small numbers. In one case some of the nuclei of white cells were distinctly colored by hæmatine. Between these advanced changes and pure fatty marrow, all possible intermediate stages were found. In none of the cases was the spleen enlarged, but the lymphatic glands situated near the focus of inflammation were invariably much swollen.

The microscopical appearances in these cases were very similar to those met with in some cases of leucæmia. Microscop-

ically, the changes resembled perfectly those of acute anæmia, which have been studied experimentally by Neumann and Litten and Orth, but microscopically they differed in the proportions of nucleated red-blood corpuscles. Professor Busch believes that the septicæmic character of all the cases that proved fatal during the first week had an essential influence in the production of the changes in the marrow.—*Berliner Klin. Woch.*

The Doctrine of Transmutation of Species.—M. Haeckel, Professor in the University of Jena, while present in Paris during the session of the Congress for the Advancement of the Sciences, was waited upon by a number of physicians and savants and banqueted at the Grand Hotel. At the close of the banquet M. Haeckel delivered the following discourse:

Messieurs,—The amicable reception which you have vouchsafed me touches me more than I know how to express, because I recognize that it is not the individual whom you thus honor, nor the works which he has produced, but a profound love of truth, of philosophical doctrine, a faith in the theory of evolution and of descent, for the defence of which I have had the honor of being so severely attacked; these are the secrets of the sympathy which has united us to-day.

I behold with unfeigned delight how in this congress of scientists the theory of evolution has already penetrated the spirit of French savants. In the section of biology the theory of transmutation has had many orators who have adopted it as the only explanation of the phenomena of life which they have studied. The last consequence of this doctrine, the descent of man, of apes, and of the whole series of the lower organic forms, has been proclaimed and victoriously defended by M. de Mortillet in the section of anthropology.

To know man we must commence by determining his place in nature. All the world admits that man belongs to the division of vertebrates, the class of mammifera and the order of apes. Man is a placental mammal, different from the lower mammals, but of the same origin. True, man did not descend directly from any of the existing anthropoids. No naturalist

seriously maintains this view, which is advanced in truth only by the people and theologians. Long ago frivolous and ignorant people found a subject for jest and raillery in the thought that man was only a perfected ape. No one believed it, but certain professors of philosophy and a number of facetious essayists nursed it to a prejudice. They did not doubt that it was the best argument in favor of their belief. Their blind naivete, their infantile vanity, were these not characteristics which we attribute to the apes?

But if man did not descend from any of the known anthropoids, he had none the less ancestors in common with them. He is known to be a branch of the catarrhine apes of the ancient world. One may now not doubt, as Darwin has written, that our ancestor descended from a hairy quadruped, furnished with a tail and pointed ears, and who dwelt among trees. This was certainly an ape, and every zoölogist will classify it in the same order with a common ancestor, more ancient still, of the apes of the ancient and of the modern world.

What has sooner or later led all good spirits to the doctrine of transmutation is the belief, every day more fixed among us, in universal causality, of development and continuity in nature. Every day adds to the number of those of whom Strauss has spoken when he said "they seek the truth, all the truth, and can not rest except in the clear survey of the universal chain of cause and effect."

Reason, causality, mechanism, these we see on the one hand; superstition, mysticism, teleology (purpose), these we see on the other. What free spirit can hesitate between them? Kant has already said "all veritable science reduces itself to mechanics as to its principles." The theory of evolution which considers and embraces all nature, as a whole, substitutes final causes with existing causes. Fall before it the old dogma of the saints, of final causes, of immutability of species, of the sterility of bastards, geologic catastrophies and successive creations, the impossibility of spontaneous generation and the growth of man upon the earth.

We may not say at what moment nor under what conditions the first forms of life appeared at the bottom of the sea. But

we may say, as a statement beyond doubt, that they were formed chemically from inorganic compounds of carbon. Primitive monera are born of spontaneous generation in the sea as crystals are born from their mother waters. There is, in fact, no alternative to explain the origin of life. Who does not believe in the spontaneous generation, or rather in the secular evolution of inorganic into organic matter, admits a miracle. * * *

The doctrine of final cause has all the naivete which we encounter among savages and infants. The theories of Lamarck and Darwin have given the last blow to this falling belief. Modern morphology is irreconcilable with, I will not say the dogma of creation, but with that of a Providence or a vague ideal pantheism, as maintained by Hegel, Schopenhauer, and Hartmann. The phenomenon of human embryology can all be explained as the mechanical and necessary effects of evolution from ancient ancestral forms in conformity with the laws of heredity and adaptation.

Seventy years have elapsed now since Lamarck created the theory of descent which Darwin a half century later developed and fecundated with the doctrine of selection based upon physiological laws of heredity and adaptation. Goethe had also conceived this doctrine, which has thus seduced philosophers, poets, and critics of the calibre of Kant, Goethe, and Strauss.

These great and noble men of genius caught glimpses of the fact, which we know to be such to-day, that the theory of evolution is only a special example of that most vast of all cosmic hypotheses, the doctrine of the transformation and conservation of force. The finest spirits, the wisest sages, recognize to-day the conservation of force as a law with all the characters as Martin has said of the laws of Newton.

Our mission as successors to the generation of the heroes of the eighteenth century, Laplace, Lavoisier, Kant, Lamarck, Wolff, our mission as naturalists, physiologists, physicians, philosophers, is to continue the traditions of sound thought and manly love of liberty which we in common with them inherit from our fathers in Ionia and Attica, whom we venerated in our infancy as the fathers of all modern science.—*La France Med.*

A New Nipple Shield.—The nipple shields ordinarily used are, according to Dr. Bailley's experience, unsatisfactory for several reasons, and all have this fault, that they are made of opaque material. For this reason he recommends a new shield which consists of a bell-glass with an olive-shaped point, and an india-rubber tube with an ivory guard. This latter is of the same kind as those ordinarily used, and may be directly attached to the bell-glass. The advantage of this invention is that the child, in consequence of the projecting form of the attachment, can take hold of it better, and thus nurse more easily, and furthermore, one can see if the shield is properly applied, so that the orifices of the milk ducts are not stopped up. Furthermore, it is not more expensive than the old forms. When the apparatus works well the milk flows abundantly from the nipple after a few draughts, fills the glass, and flows into the child's mouth. Bailly has had good results with more than a dozen patients, one of whom could not nurse the child without it, in consequence of the great vulnerability of the skin.

The time which is required to nurse the child is not longer than by the natural way. Failure may occur when this glass is too small or too short, or when the tube is so soft that the child presses the sides together, or when the opening is too small, or finally, when the tube is not fastened air-tight upon the glass.—*Schmidt's Jahrb. Med. Neugk.*

Opiates in Cerebral Anæmia and Diseases of the Heart.—Dr. Huchard ("La France Méd.," from "Journ. de Thérap.") speaks of the splendid results obtained by the administration of opium to persons suffering from insufficiency or narrowing of the aortic valves. He gives numerous instances in which the happy effect of this remedy has been manifested. In the course of certain affections of the heart, where the attacks of suffocation and of dyspnœa have acquired an extreme intensity, injections of morphia are of great service.

Opium, given in the dose of one to two centigrammes (gr. $\frac{1}{6}$-$\frac{1}{3}$), produces slight excitement of the circulation, animation of mind, and increase of muscular force; if the dose be pushed to five or ten centigrammes, depression of the circulation, with

a tendency to sleep, is brought about. M. Gubler, in his Commentaires, urges the utility of opium in want of stimulation of the nervous centres, through an impoverished or altered blood; and Dr. Vibert suggested a year or so ago that injections of morphia should be practiced previously to the operation of thoracentesis, and even in every operation where there might be danger of syncope, with a view to prevent its occurrence. It is for the same reason that Dr. Huchard has employed this drug. In cases of narrowing or insufficiency of the aortic orifice, where patients present the symptoms of asystole, with suffocation, dyspnœa, cold sweats, paleness of the face, algor of the extremities, etc., he has seen all these symptoms diminish after the hypodermic injection of one centigramme ($\frac{1}{6}$ gr.) of morphia. M. Huchard says that if opium is useful in aortic affections accompanied by vertigo, tinnitus aurium, tendency to deafness, cephalalgia, and occasional dilatation of the pupil, it is because it overcomes the cerebral ischæmia. For this reason opium may be used as a tonic in many anæmic conditions, as phthisis.—*London Med. Record.*

Extirpation of the Rectum.—Through a gradual improvement in the technique of the operation and particularly of the after-treatment, Volkmann has achieved successes which justify him in terming the extirpation of the rectum a relatively harmless operation, although he practices his excisions more extensively than formerly, and does not dread the opening of the peritoneal cavity. The difficulty in the treatment pertains to the establishment of efficient drainage of the wound, combined with oft-repeated antiseptic injections, or even permanent irrigation with an antiseptic solution.

In relation to the operation itself, malignant growth of the rectum may be classified as follows: 1. The circumscribed tumor, easily removed by excising a segment of the rectal mucous membrane. 2. The diffuse infiltration of the rectum, including the mucous membrane of the anus. 3. The diffuse infiltration beginning above the sphincter of the anus. In cases of the first class, the field of operation being exposed by forcible digital dilation, or by the introduction of a Sims' speculum,

the tumor is caught and drawn down towards the anus and excised. The next step of the operation consists in introducing a long narrow bistoury on the affected side near the margin of the anus and pushing it upwards underneath the mucous membrane until its point is perceptible in the wound occupying the former seat of the tumor. Through the channel thus made a drainage tube is passed, after which the lips of the wound in the rectum are accurately united by sutures. If union by first intention ensues, the cavity without the rectum can be easily cleansed with antiseptic injections through the drainage tube.

Malignant diseases of the rectum which begin at the anus, necessitate the extirpation of the entire viscus. Before dividing the tube between the healthy and diseased portions, silk sutures should be drawn through the former in order that it may subsequently be united to the healthy skin. After this operation also, a number of drainage tubes are inserted along the rectum the entire length of the wound. If the peritoneal cavity is opened during the first act of the operation, the wound in it is closed (after thorough disinfection) with cat-gut sutures. In cases where the disease diffusely infiltrates the rectal mucous membrane above the sphincter, the affected portion is removed after having been divided anteriorly and posteriorly in the median line, the uppor portion being then drawn down, is united by sutures with the mucous membrane lining the sphincter, drainage having been provided for as in the previous cases.

The advantages of the operation are greatest when the lower portion of the gut is sacrificed, because in relapses there are no such painful impediments to defectation as invariably supervene when the sphincter of the anus is present.—*Samml. Klin. Vortrage.*

The Tar Bandage.—Dr. C. B. Leitner, at the last meeting of the Medical Association of Georgia, called attention to the advantages of the tar bandage. Besides possessing all the merits of starch or plaster of Paris, it is antiseptic. He records a number of cases of contused and lacerated wounds and compound fractures in which the benefits resulting from its use

were marked. The following case illustrates his method of using it:

"On the 27th of July, 1875, a negro thirty-five years of age, deaf and dumb, was run over by the cars. His tibia and fibula, six inches below the knee, were crushed into a fibrous mass, leaving, however, enough of the gastrocnemius muscle to form a flap. Assisted by Dr. Wynne, I amputated the leg two inches below the lower insertion of the tendon of the patella. The flaps were drawn and two or three sutures taken, then tarred strips of cloth were applied, as adhesive strips would have been used, for six to eight inches above the wound. The roller bandage was then placed over these and the whole well tarred.

I wish to call attention to another advantage connected with this dressing—that is, it does not require reädjusting so often as other modes, only every twelve or fourteen days, unless some constitutional disturbance should be apparent.

The leg was not dressed again until the 6th of August, notwithstanding the weather was the warmest I ever experienced in Georgia, and the subject perhaps one of the worst that ever happened to such an accident. His bowels were loaded with unripe fruit, and with every kind of foreign matter that a tramp, at that season of the year, could procure, besides, he had upon his head, arm and shoulder two or three badly-contused wounds, which were treated by the application of tar ointment. The leg was not dressed the third time until the 2d of September, when he was turned over to the nurse, and in a week he was out upon crutches.

In applying for the first time the bandage, at the most dependent part a little V-shaped valve was cut, to allow the escape of pus. He was not annoyed by a fly, or by any bad symptoms, and the recovery was very speedy, which I attributed to non-interference with the bandage. I am perfectly satisfied in my own mind that the frequent dressing of wounds is a source of great irritation, to say nothing of the amount of granulations that is broken up. Should there be any mischief going on under the bandage the constitutional effects must be apparent.

My manner in preparing this fresh pine-tar ointment is to put the tar into a glass vessel and to place the vessel in a pot

containing water; after the water has boiled for a half hour the vessel containing the tar is set aside until all the foreign matter is precipitated, then decant, leaving the foreign matter at the bottom; finally, add one part of sweet oil to twenty parts of the tar. After the roller bandage is adjusted, in amputations, this ointment should be thoroughly applied, once in four or five days being sufficient. In wounds, cloth strips can be used as one would use adhesive strips. I would recommend cold water dressings to the wound."

Hydatid Cyst of the Liver in a Child.—"L'Union Médicale" contains an account of a child three and a half years of age, who was admitted into the Sick Children's Hospital, under M. Archambault, February 5th. It had for a year suffered from a large belly; this enlargement had been gradual, and was not accompanied by diarrhœa, vomiting, or jaundice. There was no dog in the house where the patient lived. On examining the abdomen, a projection was at once noticed on its right side; palpation revealed the existence of a tumor springing from the liver, and the edge of this organ could be plainly felt to be sharp, raised, and prominent in front. It was easy to recognize that the increase in the volume of the liver was not due to hypertrophy of the organ, but to the presence of a true tumor, round, smooth, and painless, equal in volume to the head of a fœtus, appearing to originate in the right lobe of the liver; there was no discoloration of the skin covering the growth. The tumor was hard, but neither fluctuation nor fremitus could be made out, but at its most projecting part a semi-elastic feel suggested the idea of a liquid collection. The child was healthy and plump, without any trace of scrofula or of osseous suppuration; there was no digestive disturbance, no œdema of the limbs, no ascites.

On February 8th, chloroform having been administered, M. Archambault punctured the swelling with an aspirating needle, and withdrew 450 grammes (nearly a pint) of a fluid as clear as rock-water. An examination showed this to be non-albuminous, and the microscope did not reveal any hooks. The child progressed favorably until the 11th, when the temperature rose,

and slight pain was complained of near the umbilicus, but the belly was not very sensitive to the touch; the liver still remained large, but no tumor could be felt. The symptoms improved until the 20th of the month, when diphtheria made its appearance, accompanied by albuminuria, and suppuration in the right submaxillary region.

On March 10th the mother removed the child from the hospital; at that time it was pale and very feeble, but the albumen had disappeared. The hepatic tumor had not been reproduced. Five days afterwards death took place, this being preceded by an attack of diphtheritic paralysis. M. Peter, who reports the case; states that the age of the patient is an object of especial interest, as many writers upon diseases of children do not mention this malady. West, D'Espine, and Picot are exceptions; the last two having published some cases of hepatic cysts in children four years of age. Below this age the affection is not mentioned, except the case quoted by Cruveilhier as occurring in an infant twelve days old, where the hydatid cyst opened into the intestine. It is generally at about eight years of age that the disease occurs most frequently. The youngest patient observed by Frerichs was seven. Besides the age, there are three other noteworthy circumstances: 1. The absence of hydatid fremitus; 2. The absence of hooks, so that the parasitic nature of the affection was only made possible by the volume of the cyst; 3. The cure by a single puncture. These circumstances can be explained by the absence of secondary vesicles, or at least their presence in a very small degree, for it is known from the experience of Dr. Sadde that the fremitus denotes the presence of a certain number of daughter cysts. If the fremitus be absent, one ought to find few or no hooks.—*London Medical Record.*

Spina Bifida.—Professor Ranke, of Munich, has published an interesting contribution to our knowledge of the origin of this affection, based upon five cases, of which four died. In all the lumbar region was the seat of the malformation, and in no case was there any complication of hydrocephalus or hydrorachis. One case was punctured four times, and was remarka-

ble from the circumstance that the child, after each operation, fell into a deep sleep; it is conjectured in consequence of the diminution of the intracranial pressure. The cerebro-spinal fluid was very rapidly re-formed in the course of a few hours on each occasion; and from this it is assumed that the arachnoid, from which the fluid is supposed to come, must be a secreting organ of considerable energy, its action being probably produced by the diminution of intracranial and intervertebral pressure consequent on the paracentesis. The anatomical appearances in the fatal cases were as follows: In the three cases in which the sac was covered by normal skin the spinal cord was united with the wall of the sac, and extended as far as the lower sacral vertebræ, being thus considerably lengthened. From the place of adhesion the roots of the sacral and lumbar nerves were seen to ascend to their respective intervertebral ganglia. It is conjectured that the spinal cord, during the early period of fœtal development, while it occupied the whole length of the canal, became adherent to the skin, and was thus retained in its lowest position. The intervertebral pressure gradually bulged and stretched the skin, carrying with it the spinal cord; and this dislocation of the cord prevented the closure of the vertebral arches at the spot. The patency of the vertebral arches is thus regarded as the consequence of the original morbid condition. This idea was suggested by Morgagni, and advocated by Cruveilhier, although a very different opinion has been attributed to the latter in Germany, and even in France, in consequence of an erroneous statement by Virchow.

Complicated Case of Ovariotomy.—In the "Wiener Medizinische Wochenschrift," Dr. von Mosetig-Moorhof relates a case of bilateral ovariotomy. Emilie Dudisz, twenty-one years old, *puella publica*, came under his care in July, 1877, suffering from an abdominal tumor. Dr. Mosetig-Moorhof diagnosed an ovarian tumor, and proceeded a few days afterwards to operate. After the cyst had been tapped by the trocar and drawn out of the abdomen, it was found to be the left ovary, and another tumor was found lying in the right hypochondrium. The

second tumor proved to be a cystic dilatation of the Fallopian tube, the ovary at the extremity being normal and containing several corpora lutea. The ligamentum latum was transfixed with a catgut ligature, and the cystic dilatation, together with the right ovary, removed. A clamp was applied to the pedicle of the left ovary, and the abdomen closed. A Sims' drainage tube was applied. The recovery was rapid and marked by absence of fever. The drainage tube was removed from the vagina on the eighth day, the clamp fell off on the eleventh day, and on the fifteenth day the patient left her bed. Eight days later she left the hospital in perfect health.—*Lond. Med. Record.*

MEDICAL NEWS.

'Nulla dies sine linea."

Alcohol in Fever.—Testi Alberico gives as the result of his clinical investigations on the action of alcohol ("Bost. Med. and Surg. Jour.") first, that alcohol does not produce any depression of temperature when given in febrile states of the system, though high temperatures do not, per se, constitute any contraïndication to its use. Second, alcohol, as long as it remains unaltered in the system, is a powerful dynamic of the vaso-motor nervous system. Third, as a consequence of the changes which alcohol undergoes in the system, it indirectly becomes a valuable aliment, whilst it augments the metamorphosis of tissue.——*On Abscesses at the Verge of the Anus.*—Verneuil ("L'Abeille Médicale") recommends that in opening such abscesses, when they are close to the rectum, the operation for fistula should be performed at the same time.——*Assimilation of Quinine.*—M. Personne finds that about one-half of the quinine taken by the mouth is destroyed in the system. He found that all the quinine which is eliminated by the urine and soluble in acid can be transformed into neutral sulphate of quinine without appreciable residue; also that a resinous ma-

terial is obtained, insoluble in acid and similar to that which is obtained during the extraction of the alkaloids of cinchona. Hence it is inferred that the quinine which is eliminated by the urine, about half the amount ingested, has not undergone any appreciable modification.——Dr. J. M. Keller, of Hot Springs, Arkansas, who for the past two months has been engaged in attending yellow fever among the refugees from various places in the South, and in visiting the sick with that disease along the Louisville and Memphis Road, leaves this week for his home at the Springs, where hereafter all communications will reach him.——Leprosy appears to be on the increase in Spain. No less than 116 fresh cases occurred last year in the province of Valencia. The authorities are about to establish a leper hospital in Alicante.——We have reason to believe, says the "London Lancet," that it is the intention of Mr. Callender, of St. Bartholomew's Hospital, to proceed to the United States early in December, with the intention of seeing the practice and teaching arrangements of the distinguished surgeons of America.——Dr. Crawford W. Long, reputed by Dr. J. Marion Sims to be the first discoverer of anæsthetics, died recently at his home in Georgia, at the age of sixty-three.——The sudden death of Dr. Hermann Lebert is announced. He died at his home in Switzerland, at the age of sixty-three. For many years he has stood prominent as a medical scientist and author. He furnished the articles on relapsing and typhus fever and cholera in Ziemssen's Cyclopædia.——Dr. H. Mays has resigned as resident Physician of the San Francisco City and County Hospital, and his place has been supplied by the appointment of Dr. Boone.——Ex-Governor H. H. Haight, counsel for the regular Medical Board of Examiners in the recent suit in regard to the medical law, and Judge Robinson, counsel for one of the parties on the opposite side, both died recently about the same time, and both died suddenly.——*Medical Directory of Pacific Coast.*—Wm. A. Grover, M. D., late Recording Secretary of the Board of Examiners of the Medical Society of the State of California, has prepared and has now in press a second edition of his Medical Directory, greatly enlarged and improved. It will contain the names of all the regular physicians of Cali-

fornia who have, in obedience to the law, received their license from the said board from its organization up to going to press. He has also, by special permission, added to it official and reliable lists of the physicians of Oregon and Nevada, together with much other valuable information of special interest to the profession.——Dr. Peyton Grymes, of Orange county, Va., died at his home August 23d, 1878, in his 88th year. He conducted for many years the largest practice of any physician in the county.——A melancholy example of the power of the emotions is reported from Paris. Dr. Deleau had an only daughter, aged 16, in whom all his affections were centered. This young lady died on August 29th, from pulmonary phthisis, and the father's grief was so intense that, in embracing his daughter, in taking his last adieu, he fell on her corpse and breathed no more! Both were buried in the same vault, in the midst of a large concourse of mourning friends and patients. Dr. Deleau was a rising man; he took his degree in 1863, and distinguished himself as an aurist and laryngoscopist.——The deaths from the fever have aggregated about twelve thousand in the cities, towns, and villages, in which records of the deaths have been kept. There had been at the close of last week in New Orleans 3,660 deaths from the fever; in Memphis, 3,298; in Vicksburg, 1,101; in Holly Springs, Miss., 289; in Grenada, Miss., 279; in Greenville, Miss., 278; in Port Gibson and vicinity, 200; in Canton, Miss., 167; in Baton Rouge, La., 164; in Plaquemine, La., 120; in Hickman, Ky., 139; in Brownsville, Tenn., 137; in Chattanooga, Tenn., 112; in other towns, less than a hundred.——*The Blockade of the Mails.*—The interruption of the mails, which has been caused by the prevalence of yellow fever, will, it is hoped, end in a few days. As an illustration of the effects of these interruptions, it is stated that the railroads in Texas are nearly or quite all running, but all Southern cities are quarantined against mails from infected districts. About sixty tons of Texas mail has accumulated in the St. Louis post-office. About fifty sacks of this are being worked off daily in addition to the regular mails, which are now being delivered. There is a large accumulation of mails at New Orleans, La., Jackson, Meridian and

Vicksburg, Miss.——Nearly sixteen thousand poor children of New York were taken to the Seaside Sanitarium during last summer.——The Southern Clinic, a new monthly journal, devoted to medicine, surgery and new remedies, is now being published at Richmond, Va., by Drs. C. A. Bryce and J. R. Wheat. Terms $1.50 per annum. Its editors have our best wishes.

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

The Yellow Fever Commission.—We have received a circular from the Surgeon-General of the United States Marine Hospital Service giving notice of the appointment of a Commission for the purpose of investigating the yellow fever epidemic, its causes, its history, and its treatment. This Commission consists of Dr. Bemiss, of New Orleans, Dr. Cochran, of Nashville, and Dr. Howard, of Baltimore, and has already commenced its work at New Orleans, with the intention of proceeding to other places. A report of such facts as are gathered up to November 19th will be presented to the American Public Health Association, which convenes on that day in Richmond, Virginia. The labors of the Commission will not, however, terminate then and there, but its future proceedings will be discussed and arranged. As there is no appropriation as yet from the public funds, the Commission is as yet somewhat embarrassed, and it is only through the generosity of Mrs Elizabeth Thompson, of New York, that the Surgeon-General was enabled to undertake the organization of the Commission; and it is hoped that the example set by this lady may find many imitators.

On account of the sickness and absence for three months of the editor and proprietor of the "Richmond and Louisville Medical Journal" and of the "American Medical Bi-Weekly," the current numbers of these journals have been delayed in their issue. The recent return of the editor will terminate these delays, and these standard journals will be promptly issued.

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. 1.—*A Study of Shock.* A posthumous paper of great value. By E. T. EASLEY, A. M., M. D., Little Rock, Ark.

NOTE—One of that distinguished and noble band who, at Memphis, Tenn., laid down their lives in the cause of humanity.—[Ed.]

It is the object of the present paper, under such heads as will render it somewhat systematic, to treat the general subject of shock. The varied relations and importance of the thesis in its surgical, medical and medico-legal bearings admit of no doubt. The fact that many of its phenomena are imperfectly understood, and that much has been written concerning it almost indefinite, furnishes both apology and interest to the discussion. Industrious and learned compilers of surgical statistics and deductions have had occasion to regret the commonplace and obscene nature of much that has been said in reference to the affection. Dr. Otis asserts that if more care were expended in determining the actual extent and character of the lesion in wounds "there would be fewer vague descriptions of shock, and of conditions indefinable, indescribable anxiety and nervous depression." By even a cursory investigation the student will be surprised at the scarcity of monographs on the subject, and the absence of exact knowledge and teaching in even the most systematic

works. The few pages devoted to the subject in Dr. Gross' great treatise are instructive without being original. Mr. Erichsen in his book treats of it in a very cursory way, but in several separate monographs shows that he has given the whole matter very careful study. Mr. Bryant's chapter on "Shock and Collapse," comprised in less than four pages, and founded to a large extent on the labors of Savory, is clear and instructive, as is all which proceeds from the pen of that masterly surgeon and teacher. The article in Holmes' System, by Savory, on "Collapse," although perhaps not sufficiently elab orate, is in all other respects admirable. Copeland in his Medical Dictionary devotes an article of some length to a separate consideration of shock, claiming that it is the first systematic paper ever written on the subject; a claim the justice of which may be admitted, if we except the valuable work of Travers on Constiiutional Irritation, Synonyms and Definitions, Shock, Nervous or Vital Shock, Vital Depression, Nervous Depression, Fatal Sinking, Insidious Shock, (McClellan) General Irritation, (Sir A. Cooper), Constitutional Irritation, (Travers) Nervous Anxiety, (Dr. Otis.)

Sudden or instantaneous depression of organic, nervous or vital power, often with more or less perturbation of body and mind, passing into reaction, or into fatal sinking, occasioned by the nature, severity or extent of an injury, or by an overwhelming moral calamity.—Copeland, Danglison.

Prostration, collapse, or shock to the nervous system, by which terms we signify that general depression of the powers and actions of life which immediately follows any severe injury.—Druitt.

Shock consists in a perturbance of the functions of the circulatory, respiratory and nervous systems, the harmony of action of the great organs of the body becoming deranged.—Erichsen.

Sudden vital depression, the peculiar effect upon the animal system produced by violent injuries, or violent mental emotions.—Willard Parker, Johnson's Cyclopædias, Art. Shock.

No definition of shock has apparently been given which is sufficiently precise and yet so comprehensive as to embrace all its phenomena. It would not be very easy to formulate such a description, and of those above presented the first is doubtless least objectionable. It is obvious that a definition of this complexus of symptoms, to be adequate or complete, must include both their psychical and physical aspects. A woman for example, receives news of the death of a near relative under distressing circumstances, or witnesses the painful injury of a child, and so staggers, turns pale and sinks down insensible; what has happened? Without entering intimately into the process just now, it is evident the mental shock has been so great as to obliterate consciousness. Again, a man receives a lacerated wound, involving bone, vessel and nerve, and his pulse fails, he sighs, gasps and breathes heavily, his vision becomes dull and imperfect, his skin almost bloodless and clammy. In this case, also, there has been sustained a shock of greater or less intensity. In the first instance the mental distress is the only cause of the depression, in the latter it is not even the chief element, but doubtless as usual, enters largely into the causation. It is safe to say that every case of shock, however transitory or important, is attended with more or less mental depression or excitement, and that it may exist to a dangerous or fatal extent when corporeal structure is not appreciably involved; undoubtedly too, those powerful revulsions of feeling which attend sudden and unexpected joy or pleasure may have a similar effect. Instances well attested are not wanting in which patients have sunk under the over-powering influence of these causes, and a more moderate degree of shock, amounting to no more than a sort of hysterical delight, is sufficiently frequent. To be as compendious then as practicable, we may say that shock is a condition of suddenly depressed vital or nervous action, produced by varied causes, of greater or less severity and duration, and not invariably associated with violence to the physical system. This definition, if examined critically, will not be found perfect, nor would any description so summary. It is only by a further considera-

tion, to which we now proceed, that a correct idea of the condition may be obtained.

Etiology—The causes which have most influence in creating and modifying shock, may be conveniently and comprehensively arranged under the several divisions, (1) causes predisposing or remote, (2) those which are exciting and direct, (3) such as effect chiefly the brain and its nervous centres, and through them the volition, intelligence and emotions of the subject, and finally (4) those which operate by some lesion of structure of the physical system. Under the first head may be classed all those agencies which impair vigor of constitution, and so render it less able to withstand the inroads of disease, or the commotion of violence. Age, it has long ago been determined, has more to do with the result after severe operations than any other circumstance inseparable from the cases. In advanced life extensive wounds and surgical procedures seldom do well, and the probabilities of repair bear an inverse relation to the formative power already expended in development and maintainance. Such subjects make but a feeble stand against dejecting occurrences, they are more profoundly depressed by shock of all sorts, they react more slowly, and are more apt to sink without rallying. The elasticity of youth rebounds, recovers from disasters which to the old are immediately fatal. In age, too, the heart, lungs, and brain, organs which Bichat denominated vital, undergo changes and degeneration, and hence are poorly prepared to respond to any additional demand on their exercise of force. The kidneys also, those great emunctories, are apt to fail, and every surgeon knows that a man, especially an old one, with diseased kidneys, stands upon the brink of a precipice from which he may be precipitated by the smallest agitation. It is not alone the body which weakly yields to calamity, but the old man breaks down into driveling imbecility at loss of fortune or kindred, and magnifies excessively every grief. If the steps are painful and hesitating, the mind also halts, stumbles and goes astray. No where is the marvellous genius of Shakspeare more distinguished than in the account of Lear's madness, which follows fast upon

the shock of the infidelity of his daughters. The poor old demented king, wandering out into the storm, apostrophizing its spirit, invoking the wrath of the elements, as more merciful than his unnatural children, his pathetic description of his age and decrepitude,

"A poor infirm, weak and despised old man,"

all constitute a picture at once unique and truthful. We reach the conclusion then, both from what we know to be reasonable and from statistical data, that as life moves on beyond its meridian, the mortality list from disease and accident swells in a corresponding ratio, and that in the same proportion increases the liability to exaggerated mental perturbation from all direct cause.

In this category must be included certain idiosyncracies of constitution that do not admit of any ready explanation. The surgeon knows, however, that some persons bear up surprisingly under pain, and the converse. He has not infrequently to observe a degree of alarm and confusion in his patient altogether inexplicable on any other ground than that of some peculiarity of the individual system. In like manner is he perplexed to find that wounds refuse to heal, or take backward steps in the process, which he thinks ought not to do so. It is not, therefore, possible to estimate precisely the extent of shock that may supervene in any given case, and at best the careful surgeon must be satisfied with an approximate judgment. Perhaps, after all, the matter is evenly balanced, for in a general practice his disappointments will not exceed his more fortunate terminations, the idiosyncracies of his subjects leaning in his favor as often as otherwise. The point upon which we now think it worth while to insist is that it is not always safe to assert the effect which any given hurt or misfortune will have on any particular party. Of two men of apparently similar health and habits the one will linger long and doubtfully under a depression which the other will overcome with ease. The military surgeon has often opportunities to note such facts, and they not infrequently transpire during the prevalence of epidemic diseases. I have not seldom noticed a disposition among people of the utmost sincerity and average intelli-

gence to exaggerate their effections or injuries vastly. Being assured they were doing well, they have protested, in face of the fact and all persuasion, that the direst conclusions were at hand. Such patients are subject to great depression of spirits on slight provocation, and there can be no doubt their apprehensions, however imaginary, seriously militate against good or rapid recoveries.

Race, as a predisposing factor, should not be lost sight of. It has long been known that some peoples hold up better under, and are less readily affected by, dispiriting reverses of fortune than others. It requires no elaboration to show that the hardy mountaineer, from a bracing and invigorating altitude, will bear both more privation and suffering than the enervated denizens of a lower, warmer and miasm-infected region. The inhabitants of torrid climes, although vindictive and treacherous, are notoriously timid and destitute of moral or physical courage. They are not alone improvident and licentious, but they seem as wanting in moral as in physical stamina. While inhabitants of northern lands, as Switzerland, made the most determined stands for their liberties, until reduced to a handful of predatory soldiers, the lazy people of Liberia and the Indies have abandoned all that they had worth taking without a struggle. Supine and indolent, without the virtue of persistence in any important enterprise, they are apt to succumb to their bodily injuries or disorders as irremediable calamities. In striking contrast to this is the stolid heroism of the North American savage, who is trained from the cradle in the exalted precept that it is pusillanimous to betray fear of either death or pain, and who is shot to pieces or burned as intrepidly as Cranmer or Latimer endured martyrdom. Some years ago, in a paper on the Sanitary Condition of the Negro, I expressed the conviction that he is more profoundly depressed by shock than any race of people on the face of the earth. Stupid, sensual and indolent, he has neither a supply of health, nor moral courage nor worldly goods to meet the day of trial. The vaunted freedom which was to do so much for his elevation has debased him in every way; in all respects he has retrograded, and immediate

emancipation has proven the most deplorable event in his history. An appeal to his physical endurance in the hour of emergency is as fruitless as the expectation that he will provide for a time of need in his social life. Since our civil war he has been introduced to a class of diseases to which he was previously almost a stranger. Tuberculosis and specific maladies now take off large numbers of them. Insanity during their servitude was almost unknown, unless hereditary, while in 1875 there were ninety insane blacks in the State Asylum of Georgia alone. His moral and corporeal infirmities have descended to his recent offspring. I have urged before, and additional experience only confirms the opinion, that in discussing the prognosis of an operation a large allowance should be made for the simple fact that the subject is a negro. When wounded his tissues do not heal kindly, and are much disposed to slough or take on erysipelatous action, while septicæmia claims an undue number of victims. His injuries soon become phagædenic, putrid or ichorous, and his system, overloaded with morbid products, he goes down seemingly without a struggle. I have seen uncomplicated wounds end so. The reactionary power of these people does not bear that relation to the age of the patient that is observed in the white man. This want of nervous endurance of recuperative vigor to which I have alluded can not have escaped the notice of those who have had them for patients. The lesson taught is that we are to expect them to become the ready subjects of protracted or fatal shock; that in treating their wounds we should look out for septic trouble, and for asthænic visceral complications, and hence at an early day resort to tonics, narcotics and stimulants.* In an enumeration of this

*I am aware that these conclusions, although admitted by most Southern practitioners to be just, have not been accepted without dissent. Dr. L. S. Joynes (Va. Med. Monthly, June, 1875) attributes his calamitous sanitary status to his bad hygienic surroundings, and does not believe that there is any inherent tendency in the negro's constitution to yield more readily to disease or accident than is found in that of his white neighbor. Such a proposition is opposed by all but uniform experience, and is flatly contradicted when the negro has been called on to suffer and endure on terms of precise equality with the Caucasian. Dr. J. J. Woodward (Med. and Surg. His. War Rebellion. Part first Med. Vol. Introduction, pp. xxxix–xl. Trans. Int. Medical Congress, Philadelphia, 1876, p. 307) has given the death-rate among the

sort we can not lose sight of the influence exerted by the previous habits of the patient. The soldier, inspired with patriotism and inured to hardship, bears wounds and primary operations better than the citizen, who is apt to regard his misfortune as an unmitigated calamity. It needs no argument to show that a man of sound constitution, unimpaired by excesses, of regular habits, and whose mind and body have never been overstrained, in submitting to the surgeon's knife, or overcoming the results of wounds, will have vastly the advantage of him of whom opposite propositions are true. In deciding on the probability of ready reaction in any case the condition of important organs is to occupy a very considerable share of attention. The state of the heart, lungs and kidneys is to be carefully looked to. Persons of an irritable and anxious mind, or of feeble and irritable habit of body, do not rally well after surgical treatment. Such persons suffer fearfully from shock, soon become exhausted, react tardily and may sink without rallying. Individuals overloaded with fat are poor subjects for operation. Adipose tissue is a lowly organized product. In such persons the circulation is usually feeble, wounds heal slowly and are prone

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colored troops during the late war. Estimating for the whole period of service, five years and four months, the mortality is found to reach the startling proportion of 148 per 1.000 of average aggregate mean strength. Of these only 15 per 1,000 are tabulated as violent deaths. For the same period the fatality of white forces is put down as 88 per 1,000, with 33 violent deaths. The logic of such figures as these will ordinarily be thought sufficiently conclusive. They show what had long been predicted of the negro by those most familiar with his habits of life and constitution. Dr. W. is not, however, disposed to accept the obvious deduction from his own figures, and adds: "A large part of this excessive mortality was due to circumstances from which the colored men suffered before they were enlisted. The diseases which destroyed them were to a great extent engendered by the miseries they had suffered before they found a refuge under our flag." Such an observation, it is fair to say, does not accord with the facts. The Southern negro brought to his freedom an athletic and sound body and a healthy progeny. The death-rate was singularly small, and their condition in every way in striking contrast to what it soon became in the "refuge," which destroyed them at the rate of 148 per 1,000 annually. The mortuary reports from the District of Columbia make a startling exhibit. They show a death-rate among whites of 19 per 1,000, and among blacks of 49 per 1,000 per annum. That is, the blacks of the District are going into the grave over two and a half times as fast as the whites. About the same condition of things is found in Nashville, Chattanooga, Memphis, Vicksburg, Charleston, Savannah, Richmond, and every Southern city the vital reports of which have been issued.

to slough. The vital powers are normally at a minimum of functional activity, and respond inadequately, or fail when any additional demand is made upon them. A man with diseased kidneys, as already stated, is always in a perilous condition, and our prognosis must be unfavorable when such are called upon to encounter the commotion of severe wounds or operations. It is quite certain that the agitation of protracted shock may so arrest or suspend the excretory power of the kidneys, already incompetent, as to result in uraemic toxaemia, coma and death. Men who have pursued convivial or intemperate habits for a long period, addicted to dissipation and late hours, have their nerves so weakened, and all the solids and fluids of the body so depraved and disorganized, that traumatism wins an easy victory. They too often refuse to react when, on every reasonable calculation of probabilities, they ought to do so, and the surgeon has the mortification to find his best directed efforts unavailing. Nothing is more vexatious or perplexing to the medical man than to discover what a feeble hold on life his patient has, and that he continues in a state of trepidation and sinking notwithstanding the most judicious and resolute efforts to reinforce his failing powers. I have just treated a case of compound fracture requiring operation in one of these gin drinkers. He passed into protracted shock, suffered for four days with traumatic delirium, with few and brief lucid intervals, and had two separate attacks of gangrene in his wound. In such cases nothing is so useful as to keep up the customary stimulants, with the addition of iron and quinine, and, if the tendency to coma be not decided, an early and bold use of opium.

Climatic and atmospheric surroundings are to be mentioned as predisposing causes of shock, at least to the extent that they effect the general health of the individual, and render him more susceptible to all depressing agencies. The debility and relaxation, to say nothing of the blood impoverishemnt engendered by long residence in unwholesome or noxious localities, must seriously impair the normal powers of resistance to disease or accident. If it be true, as Dr. R. P. Howard has lately undertaken to show, that all the forms of

anæmia may occasionally take on progressive and pernicious characters,* the surgeon may find his patient rapidly failing when all his powers are most in demand. Surgeon H. S. Schell (War Reb., part first, med. vol. App., p. 76), writing of the wounded after the battle of Gaines' Mill, says: "Owing to various circumstances their grade of vitality was lowered. The fierce rays of a July sun soon started the usual series of changes in the dead bodies of horses and half-buried men, which strewed the earth for a mile around the house. Every hot breath of wind as it swept over the field came saturated with the disgusting odor of putrescent animal matter. In certain states of the system the nervous excitement or irritability thus engendered must act injuriously upon the parts. In a few days a feeling of languor and debility seized upon the surgeons, assistants and patients. Every fractured leg or other part of the body that required to be kept in one position, excoriated and sloughed wherever it touched a point of support. Of five major amputations, two only survived, and the same result occurred in a like number of resections. One-half of the whole number of these unfortunate men died during the month." To the depression of such pestilential surrounding must be added the constant trepidation and alarm which the sick soldier experiences in presence of the frightful mortality. No description could be more faithful or painfully graphic than Hennan's account of the nervous alarm and confusion of mind attending the Hospital gangrene at Bilboa, following the Peninsular campaign of 1813. After mentioning the local and atmospheric causes which tended so powerfully to depress the wounded, he adds: "The face of the sufferer assumed a ghastly, anxious appearance, his eyes became haggard, his pulse considerably sunk in strength, and proportionally accelerated. When these nervous affections came on the bravest soldier betrayed a symptom, which, in those of less strength of mind, formed a striking feature in every stage of the disease, viz: the greatest imaginable impatience of pain and depression of spirits. Men who had borne amputation without a groan, shrunk at the washing of

* Trans. Int. Med. Cong., Philadelphia, 1876, p. 432.

their sores, and shuddered at the sight of a dead comrade, or even on hearing the report of his death, instantly predicting their own dissolution, and sinking into sullen despair."* A similar fever, with great depression, accompanied by rapid gangrene, is described by Larry as having attacked the wounded French soldiers in Egypt, and it also prevailed in the hospitals about Brussels after Waterloo. Trivial operations are often followed by deep shock and imperfect or retarded repair, the state of the patient's constitution and his surroundings having more to do with the unfavorable result than the extent of the lesion that has been sustained.

As the result of some study of the subject, I am induced to doubt whether sex has much to do with the amount of resistance the system will exhibit to depressing influences. Women, apparently very fragile, frequently display an astonishing degree of nerve and recuperation. "I have often had occasion to remark," says Washington Irving, "the fortitude with which women sustain the most overwhelming reverses of fortune," and the observation in some respects at least, is unquestionably just. Woman adopts herself to an altered social status—descends, for instance, from wealth to poverty, more gracefully than man. But there is another view of the question—a standpoint from which she does not show to such advantage. When her affections are concerned in the disaster, she does not bear up so well under sudden and unexpected calamity, and it may be added, as a rule, that through every sorrow, she is constant; her loyalty is above all praise, and deeper than any philosophy.

Having in some sort disposed of the remote or predisposing causes, we may now enter upon a consideration of our second division under this head, namely: the direct or exciting causes of shock. Here our arrangement may appropriately be (1) those causes which effect chiefly or exclusively the mind,

* Principles of Military Surgery, Ed. 3, p. 183. A work of great value, containing many precepts of principle and practice, which have never been improved. It is a fit monument to the skill, learning, industry and amiable character of its author, who died at the comparatively early age of forty-nine, at Gibraltar, a victim to a malignant fever, which he was at the time arduously engaged in investigating.

and (2) such as expend their force principally on the body. That the emotions of joy, grief and terror may produce every degree of mental or nervous shock, is a fact both rational and well attested. The prostration attending acute grief is well known, and at times utterly paralyzing in its results. Three of the four evangelists detail in the simplest and most touching manner the agony of Gethsemane, and Luke, who was himself a physician, adds: "His sweat was as it were great drops of blood falling down to the ground." No language could possibly convey a more perfect idea of the unspeakable sorrow of the melancholy occasion, than that employed by the inspired historians.* All human experience bears witness that the Nazarene has not alone passed through this dark ordeal, and that the Gethsemanes of the earth are not confined to the region round about Jerusalem. It has been asserted that sorrow, uncomplicated, sometimes kills outright; that it so paralyzes the functions of the brain and heart that the sufferer can no longer live, and I am sure that multitudes of people realize what Brutus felt when he said,

"O, Cassius, I am *sick* of many griefs."

Every authority is agreed that Cæsar's arm was paralyzed on beholding Brutus among his assassins, and Mark Antony in his celebrated oration declares that he died broken-hearted at the ingratitude and treason of the friend whom he loved. "But when he saw the dagger of Brutus pointed against him" says Plutarch, "he let go Casca's hand and covering his head with his robe, resigned himself to their swords." The popular sentiment in relation to the disheartening consequences of sudden grief, when combined with remorse, has been well evidenced by the lavish use made of the situation by writers of poetry and fiction. Great distress of mind, attended with apprehension of bodily harm, has been not seldom mentioned as a potent cause of vital shock. The cases popularly credited, in which the hair is said to have turned white in a few hours from these causes are well known. Without criticizing

* Then saith he unto them, My soul is exceedingly sorrowful, even unto death. And he went forward a little, and fell on the ground, and prayed that if it were possible, the hour might pass from him. Mark xiv: 34–35.

particular instances, such as those of Marie Antoinette or Bonavard, or entering into the argument, it is enough for our present purpose to say that the evidence on which some of these examples rest appears to be quite conclusive. Mr. Darwin has lately called attention to a particular erection of the hair of insane persons in their paroxysms of terror,* a phenomenon also previously observed by Crichton, Brown and Bucknill. The complete prostration attending extreme terror has been often remarked, and many traditional examples are currently believed. The dread of immediate dissolution or great bodily mischief frequently results not only in instant vital shock, but may end in muttering delirium from which recovery is imperfect and tardy. It may be that the unhappy sufferer passes into a condition of permanent imbecility or mental alienation. Terror in a less degree amounting to dismal forebodings of impending misfortune is no doubt a fruitful source of discomfort and danger. Intelligent nurses often say of a wounded man, he would do well enough if he did not continually fear that death was at hand, that he could never get up. Such patients seldom do well, their gloomy prognostications are unhappily but too often established. The effects of sudden terror impair the integrity of glandular products and reparative material, it may be to a very grave extent. The lacteal secretion has been in this way so deranged as to damage the health of the infant, or even cause its death. What has been said of sudden and overpowering grief and terror applies with equal force to anger, joy or any other violent emotion whatever. The defection of friends, in time of trial, the desertion of those on whose fidelity we have reason to rely, is always a shock to the feelings, felt most acutely by the noblest minds. Very different is that pusillanimous dejection which in some people follows small reverses of fortune. I have known an old man of great wealth, after sustaining a small loss by fire, go home utterly prostrated in mind and body. He was inconsolable, and continually asserted that he was very sick, and very poor, and actually feared that in a few days he would be reduced to

*Expression of the Emotions in Man and Animals, p. 295.

a state of starvation. He bemoaned his fate, his destitution, loss of friends, and helpless condition in a way which would have been ludicrous had it not pointed so sadly to his growing age and infirmities.

The ordinary fainting fits so often witnessed, and due to such a variety of causes acting through the nerve centres, are fine examples of the effects of shock. Travers says "a fit of syncope and the recovery from it present an epitome of the phenomena of shock."* So far as they go, therefore, the symptoms of a common fainting fit are similar to those which occur in collapse. They differ in degree and duration more than in kind. We shall, however, refer to this point again as we proceed. When a man has passed *through any imminent deadly peril* or has been in mortal dread of his life, although no physical harm be done, more or less collapse or prostration of all his energies ensues. Such is the testimony of those who have encountered the utmost hazards, and have met death as it were face to face.

It would not be proper to omit from our consideration certain cases, not traumatic in their origin, which depend upon pathological changes in the tissues or viscera. Most of these are obscure as to their causation, exceedingly painful and unmanageable, and some of them altogether beyond the resources of art. In some varieties of non-traumatic neuralgia for instance, no textural alterations in the affected nerve have been discovered. What we are familiar with, unfortunately, is the vicious, excruciating pain, and the shocked, agonized physiognomy of the sufferer. A woman in a paroxysm of nervous head-ache, with palid, pinched face, will press her throbbing brow, and totter almost as a drunken man under the frightful pain. The pinched anxious face and rapid sinking of patients attacked with cholera and spotted fever are quite characteristic of those diseases. Louis, Bartlett, Wood and other systematic writers have graphically described the quick collapse which succeeds perforation of the intestine, in the latter stages of continued fevers. The patient goes down, sinks, in appalling haste, and the symp-

*On Constitutional Irritation, 1827, pp. 127, 128.

toms of shock are as defined as though he had died of a major operation, or lacerated wound of immense magnitude. This is also especially true of the intense anxiety and constant suffering of acute peritoneal inflammation. The countenance in this variety of shock is peculiar. When distinctly defined and accompanied by change of complexion, it is the face which Hippocrates has portrayed, "a sharp nose, hollow eyes, collapsed temples, the ears cold, contracted and their lobes turned out, the skin about the forehead rough, distended and parched, the color of the whole face green, black, or livid or lead colored." These appearances denote impending death, irrecoverable exhaustion and shock. They assert, with more emphasis than language can do, that the beginning of the end has arrived. Intermediate between these fatal appearances and slight depression is the coma-vigil of authors, and the "prostration with excitement" of Travers. In all cases of shock there is more or less mental alarm or confusion. In some mental anxiety and dread are the only causes of the sinking. Again, those in which traumatism enters as an element present a mixed character, and superadded to the absolute destruction of tissue the patient may pass into a state of nervous terror, delirium, catalepsy, collapse or hysterical convulsion. In illustration we may recall those experiments in which convicts have been blindfolded, and under the fear of being bled to death, have actually fainted and perished, although they had not lost a drop of blood. One of the old surgeons, Cheselden perhaps, lost a patient from dread of perineal lithotomy, although no incision had been made. Cooper and Desault record each a death from fear of a similar operation.

We now enter upon that grand division of our subject, traumatism, which doubtless produces shock, more frequently, profoundly and fatally than all other causes combined. It is not necessary that the injury inflicted should be a wound in the technical sense to produce a most sickening degree of pain, perhaps fatal results. It has been frequently asserted that mortal collapse has been brought about by a blow on the epigastrium, without organic lesion. Death, attributable to

such a cause, must of course be very rare. Yet, notwithstanding the scepticism of some authors, the balance of evidence is in favor of its having so happened. Bryant, following Mr. Pollock, and sustained by the opinion of Dr. Otis, still regards the question as an open one. Sir Astly Cooper's celebrated case, in the very words of that illustrious surgeon, is as follows: "A healthy laborer belonging to the India House was attempting to lift a heavy weight, when another laborer came up and said, 'stand on one side and let an abler man try,' at the same time he gave the former a slight blow on the region of the stomach, when the poor fellow immediately dropped down and expired. On examination of his body there was not any mark of violence discovered."* Le Gros Clark says, (Principles of Surgical Diagnosis, 1869) in substance, that there are no diagnostic signs by which we may know, in the first place, whether shock following an abdominal injury exists apart from, or as evidence of violence to tissue. Time alone can determine this point, and a post mortem enquiry may be necessary. Before and since Cooper's day many authorities have declared the possibility of dissolution from the shock blows unattended with discoverable corporeal lesion. John Hunter gives such a case: 'A healthy young soldier, confined for desertion, received a blow on the pit of the stomach from one of his comrades, from which he dropped down dead. He died almost instantly. On opening the body no preternatural appearance was observed."† Dr. Gross relates as authoritative. "Many years ago I saw a man who instantly expired from a blow inflicted upon the epigastrium with a fist. The records of surgery abound in similar examples."‡ Dr. Otis says the records of the Surgeon General's office furnish no such case. I have never seen all the fourteen numbers of the Confederate States Medical and Surgical Journal, or many of the army reports, and do not know what the fact may have been in the South, but that the Surgeon General, Dr. S. P. Moore, believed fully in such a possi

*Cooper's Lectures, Ed. 4, p. 13.

†John Hunter, works by Palmer, Vol. 1, pp. 238, 239.

‡System of Surgery, Vol. 2, p. 661.

bility is proven by the fact, that the following questions are asked in one of his circulars to army surgeons:

"Any relation between the character of the injury and gravity of the shock? Any death in your practice from shock alone?"

The solar plexus supplies all the viscera in the abdominal cavity, and its semilunar ganglia are the largest in the body. It is not incredible that sharp, direct concussion, even without destruction of continuity, should possibly arrest or even destroy organic function. When a pugilist or man at base-ball is struck in the epigastric region, the blow is stunning, the pain intense; the man may fall down; he catches his breath, as it is called, with difficulty; the heart is tumultuous and feeble, the expression startled, the face pallid and suffused with sticky perspiration. These symptons all indicate a high degree of functional disturbance. The man is in a critical condition, he may even die. Especially is he prone to suffer seriously if any disease of important organ has previously existed, and this for the most obvious reasons. If no internal effusion or rupture has been sustained, the symptoms most likely will be of short duration. Let the surgeon, however, refrain from too confident a prognosis. He can not tell primarily the extent of the mischief; time, the arbiter and teacher, must do that. It is a mistake, as already shown, to suppose, as Mr. Bryant asserts, that the idea of death being caused by blows or contusions without traceable wound originated with Cooper. The opinion was popular among surgeons long before Sir Astley's time. Hennen expressly mentions it more than once, and says (Op. Cil., pp. 312–346): "In many cases in military practice, when great injury has been occasioned by guns, tumbrils, &c., running over a man, the concussion alone is so great that the functions of the heart, diaphragm and lungs are for a while impaired, and sometimes actual death takes place, without any satisfactory explanation of the cause being afforded by dissection." We hold, therefore, that it is a safe and sometimes unavoidable medical opinion, that a person may die from shock, and that too, as a consequence of violence, without any injury

being discoverable to account for death. No doubt is felt, I believe, that death may be occasioned by concussion of the brain when that organ is found in a normal condition, and all the viscera of the body healthy. It seems equally credible that a blow over the epigastric plexus, which communicates directly with the cardiac nerves, might in like manner destroy life. If we turn to a medico-legal view of the subject, several remarks are suggested. The amount of abrasion, echymosis or swelling, is very far from being a uniform index to the force of a blow, or the actual extent of violence inflicted. In fact neither the one nor the other of these signs is the necessary or constant accompaniment of a blow or fall. If, therefore, we exclude as causes all wounds but such as show a visible mortal lesion, we shall have a large number of deaths undoubtedly due to violence unexplained.*

Taylor, to whose judicious remarks I beg to refer my reader, treats the subject in several places, and summarizes the conclusion in substance that there can be no medical doubt that an individual may die from shock, following violence without any marks of injury being discovered after death.†

A multiplicity of wounds may result in death from the shock inflicted, which, taken singly, are unimportant. A man may receive many injuries, as from blows or strikes, none of which, considered alone, could be termed mortal, and yet he may die immediately or in a short time. It is common even among medical men to refer death to exhaustion, but this is only another way of expressing the fact that the sinking depends on a fatal impression on the nervous

*In these cases great caution will be necessary on the part of medical witnesses, and the autopsies should be carefully made. Parts already diseased for example, may be fatally damaged by very slight concussion. Take this instance. In the State vs. J. P., an old woman had been pushed down backward by the hasty opening of a door by the prisoner. Other violence was suspected. The eucephalon was examined by Dr. Skipwith, of this city, and myself. A cyst, well organized and of unusually large size for this locality, was found in the base of the brain. It had ruptured and poured out its fluid contents and blood, the patient dying of the symptoms of compression. We testified that the woman might have died at any time from very slight violence, or even without extraneous cause. The prisoner was convicted of involuntary homicide.

†Medical Jurisprudence, Ed. 5, pp. 225–6.

system. The military punishment of flagellation is occasionally followed by death as a direct consequence of shock. It is asserted, as a well-ascertained medical fact, that "multiplicity of injuries, each comparatively slight, are as capable of operating fatally as a single wound, whereby some blood-vessel or organ important to life is directly affected." In a trial for murder in Germany some years ago, it was shown that the deceased had only been flogged with willow switches. He died in about an hour. The famous case of the Duchess of Praslin, who was murdered in Paris by her husband in 1847, furnishes another example, for not one of her numerous wounds was of a grave character.

One of the most deadly causes of shock is the entrance of air into the venous circulation, and its passage into the right chambers of the heart. When the quantity of air so introduced is very small, the patient may escape death, but it may be laid down as certain that no considerable amount of air ever passes into the veins without causing instantaneous dissolution. The calamity is denoted by a hissing, gurgling or whistling sound, the face turns deadly pale, there is a peculiar whining cry, the pulse flutters—fails, and life is quickly extinguished. Even more rapidly than this short succession of events may the sufferer expire. In the words of Sir Charles Bell, "Neither violence, nor loss of blood nor even the bursting of the aorta, produce effects so sudden and appalling as this cessation of motion as if by a lightning stroke."*

Dupuytren and Sir Charles Bell have vividly described cases dying of the accident, and Bransby Cooper and Valentine Mott and others, in which recovery occurred. When the air in the heart is so large in quantity as to occasion instant syncope, the circulation is nearly or quite arrested, the patients are apparently and frequently really dead. But whatever be the termination, the cases are all attended by the most conspicuous phenomena of shock.

There is no doubt that the shock to the nervous system of a prolonged and severe labor is every now and then fatal.

* Practical Essays, 1841, p. 11.

Churchill, in his chapter on "Sudden Death in Parturition," has brought together a number of such cases from various ources.* It is also probable that some of the examples of sudden death, reported by Wright as "sudden paralysis of the heart," by McClintock as "syncope," and by Chevallier as "idiopathic asphyxia," were really due to the shock of the labor. It is a fact to be remembered that each of these terms is often used in an indefinite way, and each causation may very well be but a manifestation of the collapse of profound shock. To say, then, that a patient has died from syncope, asphyxia, or paralysis of the heart, is only another way of saying that she has perished through an overpowering impression on the nerve centers. A host of observers have noted such deaths uncomplicated with hemorrhage or organic injury. The unfortunate woman may die instantly; the great organs may fail as a taper goes out, in the twinkling of an eye, or she may continue to live for a few hours, and then die restless, dejected and collapsed. Mr. Travers observes that "pain, when amounting to a certain degree of intensity and duration, is of itself destructive. Difficult and protracted parturition is occasionally fatal from this cause, and, even in cases in which neither extraordinary difficulty nor protraction was experienced, a fatal prostration has sometimes supervened, which has admitted of no other explanation. The delivery has been completed without any degree of physical injury, and not more than an ordinary quantity of blood has escaped from the vessels of the uterus, yet the woman, in spite of the encouragement derived from the consciousness of safety to herself and infant, and of comfort from the conclusion that her sufferings were at an end, has never rallied either in strength or spirits, but after an interval not exceeding a few hours, passed in a low and sinking state, has unexpectedly, and with little perceptible alteration, expired."† It is most likely that a result so untoward depends quite as much, if not more, on some idiosyncracy of the patient as on the character of the labor. Again, it is to be

*System of Midwifery, ed. 4, p. 523 et seq.

†Op. Cit., p. 48.

noted as having a direct bearing on the prophylaxis and treatment that the shock to the nervous system is not in proportion to the length of the first, but of the second stage. Neither the duration nor pain of the first stage of labor can have much to do with determining the nature of its sequences, and, since it has recently got to be so much more than ever in our power to limit the second stage, these deaths are and ought to be extremely rare. It may be relied upon when, in a prolonged second stage, a patient begins to show signs of constitutional suffering and exhaustion, that the initial lesion is one of vital shock. Such a point, in any case, is far beyond the period at which "a meddlesome midwifery is bad." The attendant must himself afford relief, and he is called upon to do so by every claim of justice to himself and suffering humanity. As to the intimate nature of what takes place in these cases we really know but little, but of that we will have something to say when we come to consider the morbid anatomy and modes of death.

Hemorrhage, from whatever cause it may be produced, of whatever nature it may be, when considerable in quantity, and frequently when it is not so, whether immediate, profuse and overwhelming, or later, delayed, gradual or concealed, is a fruitful and general cause of shock. In those larger bleedings which prove quickly mortal it is not surprising that the morale of the patient should give way, for all of the steadiness of the surgeon is required to do his duty when the life-tide passes out so fast beneath his fingers. The severity and duration of depression so caused will, of course, be modified by several circumstances—chiefly by the nature and extent of the wound, the degree of pain which accompanies it, and the amount and rapidity of the blood loss. John Bell's description, written over seventy-five years ago, is still worthy of being committed to memory: "In slow and in sudden hemorrhages," wrote the master, "the symptoms are very different. In the former the patient is very slowly exhausted. At each return of bleeding the patient faints and is laid in bed, and the cold applications and fainting save his life. He rises, after some days, pale, languid and

giddy. The pulse flutters, and is hardly to be felt; the breathing is quick and anxious, accompanied with sighing and great oppression; the heart palpitates on the slightest motion, and the slightest inclination of the head, or rising suddenly from the couch, endangers fainting. After this stage of weakness the blood loses its color; from this time forward it is a bloody serum only that distils from the vessels, dropsy appears, and the slightest loss of blood proves fatal. But when the patient expires suddenly by an impetuous bleeding from some great artery; when he dies of the bleeding from a femoral aneurism; when he is wounded among the viscera, and some great vessel is pouring out blood, the blood in the general circulation, in place of being forced onward by the contraction of the arteries, runs backward toward the wound from all parts of the body. The arteries no longer push on the contents of the veins, the blood ceases to flow toward the heart, the heart ceases to act, and the countenance assumes, as in asphyxia, a lived hue from want of circulation. The face becomes all at once deadly pale, the circle around the eyes is livid, the lips are black and the extremities are cold. The patient faints, revives and faints again; with a low and quivering pulse, he is sick and his voice is lost. There is an anxious and incessant tossing of the arms, with restlessness, which is the most fatal sign of all. He tosses continually from side to side; his head falls down in the bed; he raises his head at times suddenly, gasping, as it were, for breath, with inexpressible anxiety; the tossing of the limbs continues; he draws long, convulsive sighs; the pulse flutters and intermits from time to time, and he expires." It is evident, also, that the body may be slowly drained of a much larger quantity of blood than would prove fatal had it been poured out *per saltem*, or in jets, as the heart beats, and that in the latter case the shock would be correspondingly greater. Often a man, especially if his hold on life be a feeble one, perishes from the shock and exhaustion of a rapid loss of blood when the wound from which the hemorrhage proceeds is simple and unimportant. Last year I was summoned to attend a man who had been stabbed in the upper

third of the arm. The cut extended around the axillary surface, and went to the bone; the humeral artery was clearly divided. The man gasped only three times after I saw him. Every effort failed to revive him. He must have perished within fifteen minutes after receiving the wound. He appeared exsanguine, his skin was clammy, and even in death the eyes had about them a peculiar hopeless stare. The man's antecedents were poor, his morals very bad, and no doubt he perished as much from shock, alarm, as from the actual amount of blood abstracted. Now this man's life might have been saved had one of the frantic people who swarmed around him been collected enough to make compression of the vessel above the cut until my arrival. I know how hard it is for people to conduct themselves in anything like a rational manner in an emergency, but surely the children in the common schools could be taught a thing so simple as this. It is the almost universal custom to cram the cut with rags, soot or cobwebs, which of course do no good in arterial bleeding, and which retard repair by so much if the wound is ever to heal. I venture, then, to make this digression to urge the importance of imparting a little elementary knowledge of this sort. To the strongest mind there is something appalling in the idea of hasty and violent dissolution, and to the pious and thoughtful something peculiarly pathetic in that passage of the litany which to other petitions adds: "And from sudden death, good Lord, deliver us."

[The remainder of this valuable article will appear in the Dec. issue.]

ART. II.—*Hypodermic Medication.* By JOHN R. MORTON, M. D., of Jordan Station, Ky.

[Read before the South-western Medical Association in Convention at Paducah, Ky., May 15, 1878].

Having been appointed by the President of this Association to indite a special essay upon the subject of Hypodermic Medication, to be read in the hearing of the present convention of this society, I herewith present you with a brief condensation of my own experience, and that of a few other physicians, in the use of that valuable little instrument

which has become almost indispensable to the regular practitioner of medicine.

Fifty years ago if one of us had have published to the world, that a case of severe neuralgia, spasmodic colic, or intense pain of any kind could be perfectly relieved in from three to seven minutes, we would have not only have been disbelieved, but would have been condemned as a nonsensical visionary, even as much so as was the immortal Harvey in his discovery of the circulating system of the blood, or as the renowned Jenner when he first published the action of vaccine matter in its ulterior effects upon the disease of small pox.

Doubtless there is not a physician in this room who has not, at some time or another, called into requisition the assistance of the hypodermic syringe, to relieve some species of disease or suffering by the introduction of morphine alone. Hence, after passing over and noticing the use of said drug in one or two cases, I will then proceed to call your attention to quite a number of other remedies which can be, and have been, utilized hypodermically, but which have not been generally experimented with, or so commonly used by the large majority of the profession.

When we come clearly down as to *what* remedies there are in the Materia Medica, which really can be safely and beneficially used hypodermically, I will simply state that there are indeed such a great many, which by proper care and precaution, can be used by this method of administration, that doubtless many of you will be somewhat surprised at the number of remedies thus used, and the number of diseases which have been thus treated. Therefore, I invite your thoughts upon the various remedies, and to the diseases treated, according to my comparatively limited experience, hoping that some light may be thrown out upon the subject which will enable those present to more easily and properly go about the uses of said remedies, by understanding their correct doses, the proper preparation of their solutions, and the kind of diseases to be treated.

In the first place, experience teaches us, that as there are

so many different sizes and character of syringes, made by the different manufacturers throughout the country, we should first know the exact capacity of the instrument to be used; and as precise exactness of a class of medicine is always requisite, especially in the administration of heroic remedies, we would recommend once for all, that in the use of the hypodermic syringe we should closely follow the example of the German physicians, in ascertaining the correct capacity of the instrument intended to be used. From this fact the first thing to be done would be to find out the real and exact weight of the syringe, on a delicate and correct pair of scales, before the instrument is filled. Then compare the weight of it, after it is filled, with purely distilled water which has a temperature of from 59° to 62° Fahrenheit. When you have done this you have then got the capacity of your syringe at a given temperature, and you are thereby enabled to make precise calculations of other liquids which greatly differ from distilled water in their specific gravity. For my own purposes I generally prefer a graduated glass-barrel syringe, capacity of 60 minims, with a fenestrated metal guard, nickel plated, two steel nickel plated needles, with vial and wires for cleaning needles, cost $2.50. I use sometimes several different needles, always being very careful not to use an infected needle which has been formerly used upon an unhealthy subject; it having been my misfortune once in practice to use an infected needle, which I borrowed from a brother physician, resulting in a very large abscess, either of a peculiarly strumous, or syphilitic character, I don't know now which. The syringe should be graduated into from 30 to 60 minims, according to its size, by which you can calculate the smallest doses.

The list of remedies which experience has taught us can be safely and judiciously used by this method of administration are indeed more numerous than one would at first suppose. Among them I shall mention, first, the different preparations of opium and morphine. The muriate of morphine being the most soluble of all; also the sulph. of atropia; the solution of caustic of ammonia; aconitia; nitrate of silver; hy-

drate of chloral; hydrochlorate of apormorphia; bromine and iodine; camphor; carbolic acid; sulph. and mur. of quinine; and cinchona or cinchonidia; the citrate of or the pure caffeine; muriate of codeia; the fluid extract of ergot, or better, pure ergotine; emetin; degitalin; bichloride of mercury; iodide of potassium; hydrochlorate of narceia; nicotine; nitrate of stribnia; veratria; tinct. cannabis indica; tinct. gelsemium, &c.

In regard to the use of the preparations of morphia it is scarcely necessary to say a great deal, except it be that the intelligent physician, who is armed with a drachm of morphine and a good hypodermic syringe, with a knowledge of its use, etc., is a host against all character of pain and agony. He is really the victor of the hour, and while he is relieving his anxious patient, in an incredible short space of time, he hears many blessings showered upon his devoted head—sweet and rare music to the overworked practitioner's ears. I have relieved every character of pain and suffering by the use of morphine hypodermically, and have found it especially beneficial in very high grades of fever where there existed considerable gastric irritability in bilious remittent fevers, giving almost instant relief of pains in the back and limbs, checking all vomiting, and producing perspiration in a very short time, thereby bringing about a remission of fever much earlier than it would otherwise occur under any other circumstances. I have found it also valuable in intermittent fevers, both for aborting the congestive paroxysm and for reducing the resulting fever. The injection of morphia and fluid extract of gelsemium combined, graduated to their proper doses, makes indeed a most happy prescription in all character of fevers. I have aborted many chills by the injection of a large dose of morphia forty minutes before the chill hour, combined with putting the patient in a warm bed and giving stimulating drinks, and then proceeded immediately with quinine by mouth to prevent the next chill. In using the drug I generally dissolve from one to four grains into four drachms of distilled water, and graduate the dose by the minim marks upon the instrument, giving from one-sixth to

one-half grain at a dose, as the case may require. In the course of my practice, by the use of the hypodermic syringe, I have treated two very interesting cases, of which, being a little proud, I can not omit briefly relating in this connection. In the fall of 1875 Mr. James W. Courtney, a friend and patron of mine, presented himself to me in a very discouraged and dilapidated plight, and informed me that he had contracted the habit of taking considerable quantities of gum opium in trying to relieve himself of the pain resulting from chronic dysentery, with which he had been affected during the last six months. At this time he was taking, every twenty-four hours, a piece of gum opium about the size of an ordinary marble, but had never taken any morphine. He earnestly desired me to cure him of the habit in some manner, as he had totally failed, himself, in trying to stop off by degrees, and he had written to various friends also, whose nostrums had likewise miscarried. I told him that I would attempt his cure by a gradual reduction of the drug, given hypodermically. He agreed, and, after exacting of him a solemn oath that he would take no opium beside what I gave him, I told him he might continue his daily labor while I proceeded with the treatment. I immediately prepared a one-grain solution of the sulp. of morphia, and I injected it into the biceps muscle of the left arm. In a few minutes he had to leave me, though not much relieved. I gave him instructions to return early in the morning to my office, but in about an hour he came back to me suffering very much for his usual quota of the drug. I prepared another solution of a grain and a half to forty minims of distilled water, and injected it in the same arm, making two and a half grains of morphine then in his system, equal to ten or twelve grains of the gum opium, the effects of which I judged to be equal to about twenty-five or thirty grains of gum opium ordinarily taken through the stomach. In a half hour after the last injection he was completely relieved, went home, slept well all night, and returned next morning feeling tolerably well. I delayed using the syringe, by some persuasion, until evening, when he began to feel bad again. I prepared an-

other solution of morphia, reducing the dose one-quarter of a grain. In half an hour he was himself again. He continued from day to day to return to me, I reducing the dose one-quarter of a grain daily until I reached one-quarter of a grain dose, when I began to reduce it one-sixth of a grain, and so on to two injections of one-twelfth of a grain, until for three days I gave him only distilled water under the skin, when he inquired when he would take his last and smallest dose. I then informed him that he had felt none of the drug in his system for nearly a week. He scarcely believed me, and requested me to use the water again, and let him witness that I in truth did so. Finally he was thus convinced, and illustrated his gratitude and happiness by presenting me with a nice round sum above my fee—no common eye-sore consideration to the hardworking physician. I treated another case of an old woman—Mrs. Bullin, of Paducah Junction—who had been taking what opium and morphine she could buy or beg for several years, but not in very large quantities. This case was likewise treated with like success. I have taken a pleasure in relating these two cases because I have never seen any cases of a similar nature on record.

Sulphate of atropia can be used safely and beneficially in a number of diseases, and its combination with sulphate of morphia makes a very excellent prescription for many nervous affections, in doses of from one-thirty-second to one-sixty-fourth of a grain. I remember one case of attempted suicide—poisoning by laudnum—successfully treated in the New Orleans Charity Hospital, by Prof. S. M. Bemiss, formerly of Louisville, now of the University of Louisiana, with a solution of atropia hypodermically, in conjunction with much walking and whipping. To prepare it for hypodermic use, dissolve one grain in one ounce of distilled water, and calculate the dose by the minim marks upon the syringe. I have seen used, and have had some experience myself in the use of a solution of crystalized carbolic acid, injected into parenchymatous inflammations, and have also noticed it recommended in dyptheria. A solution is prepared by placing one part into two hundred parts of distilled water, and injected into the tissues.

I have aslo injected it successfully into pyogenic abscesses, combined with the tincture of Iodine. A solution of (caustic) ammonia is recommended by Prof. T. G. Richardson, of New Orleans, in aconite poisoning. Snake bites, chloroform, narcasic, &c. Dissolve one part in about three times its amount of distilled water. Hydrochlorate of apomorphia in doses of one-fifteenth to one-twentieth of a grain. This remedy is said to be used in all cases, with much facility, and good effects where emetin is indicated. The hydrate of chloral can also be used hypodermically in a solution of 100 grains to two drachms of distilled water in local inflamation. It has some abortive and disinfectant physiological properties, very much similar to that of carbolic acid. It was thus used in the Charity Hospital, at New Orleans, and by Prof. Warren Stone, sr., of the University of Louisiana. Aconitia, made into a solution of one grain to two drachms of distilled water, dose hypodermically, from one-sixteenth to one-twelfth of a grain. Used in all cases where the immediate effect of the crude drug is indicated. The solution of crystalized nitrate of silver has been used with pleasing success in cancerous tumors, carbuncles, abscesses, &c. A mild solution is generally used of two grains to ten ounces of distilled water, followed immediately afterwards by a solution of chloride of sodium, of two grains to twelve ounces of water. In hospital gangrene bromine is beneficially used in a solution of one part to twenty parts of water, injected around the sore in punctures one inch apart. During the epidemic of sporadic cholera at Union City, in 1872, I used with some benefit the alcoholic solution of camphor in several cases of threatened collapse. It acted as an excitant, and I think probably was the means of saving two cases out of four in which it was administered. A solution of one part to twelve of alcohol, or better, good whisky, is full strong. In two cases the use of it caused some abscess, but strange to say both of those cases recovered. The dose of the muriate of codeia is from one thirtieth to one-sixteenth of a grain, making a solution of one grain to two ounces of distilled water. This remedy can be used in hysteria, and in other chronic nervous affections.

The citrate of caffeine, or the pure caffeine itself, is a valuable remedy hypodermically when used in a proper and judicious manner. As an excitant in various diseases incident to the nervous system, and especially in poisoning by opium or alcohol or delirium tremens, I know of no remedy from which I have derived such good results as from caffeine in the few cases in which I have used it. I remember treating a resident of Paducah, a drummer, who was attacked with delirium tremens, at Union City, in 1873, in a very successful manner. The solution is prepared by dissolving about five grains in one scruple of distilled water, administering from one-fourth to two grains hypodermically, as the urgency of the case may require. In reference to the powerful drug called digitalin, I have no doubt if properly used, a great deal of good could be derived in heart diseases, or in dropsical effusions, anasarca, &c. But my experience is limited, both in digitalin, and beretrice also, when used hypodermically. In investigating the subject, I find that digitalin can be safely administered under the skin in a solution of one grain to to 1 z. each of distilled water and alcohol carefully dissolved, the dose being from one-one-hundred-and-twentieth to one-sixtieth of a grain. A veratrin solution should be formed with one grain of the drug to two z. of distilled water, the dose being from one-sixtieth to one-fifteenth of a grain, beginning with the smallest doses. It is doubtless indicated as recommended by Dr. Bettleheim, of Germany, in highly excited condition of the heart's action, in very plethoric female cases, or when there is a genuine debility of the system. The fluid extract of ergot, or what is much better the purely prepared solution of ergotin, is often indicated in severe hemorrhage, or rapid sinking from flacidity of the uterus after child birth, when the immediate effect of the drug is urgently required. A solution of the ergotin is prepared of forty grains to the half ounce of water and alcohol combined. Dose from one to two grains, or more if the case requires it. I have frequently used the fluid extract of ergot successfully in past labor hemorrhage, in doses of from eight to fifteen drops, every thirty minutes. A beautiful preparation of

ergotin solution, also of other salts and alkaloids, is prepared in one-ounce bottles, by Messrs. Park, Davis & Co., of Detroit, Mich. All the hypodermical preparations of these manufacturing chemists are very fine. The tincture of cannabis indica has also been used hypodermically by German physicians. The tincture is diluted with an equal quantity of water, and from 5 to 10 minims is injected into the system. One-sixtieth of a grain of nicotine has been advantageously used in severe spasmodic affections; one-half gr. of the drug is dissolved in two-thirds scruple of distilled water, and it is ready for use. A French physician has administered from one-sixteenth to one-third of a gr. of hydrochlorate of narceia hypodermically. He dissolved one grain of the narceia in one scruple of distilled water at a milk warm temperature, to guard against any crystilization of the salt, and used as circumstances required. The aqueous solution of opium is recommended hypodermically when there are any idiosyncracies contra-indicating the use of the preparations of morphia.

Prof. Von Shroff, a German scientist, has recommended the nitrate of strichina, by this method of administration, in epilepsy, molites ossium and a number of other diseases. A solution of one grain to one-half ounce of distilled water is prepared; four minims is equal to one-sixtieth of a grain. As much as one-twelfth of a grain has been used in some diseases. I have used myself a solution of iodide of potassium in rheumatic asthrites with some good results; also in secondary and tertiary syphilis, following or combined with bichloride of mercury. I make a solution of one scruple to one oz. of water, and inject from one to three grains at a dose. The bichloride of mercury I have also administered hypodermically in the different stages of syphilis, especially in the primary stage, to the extent of tyillization. I have injected from one-sixtieth to one-twelfth of a grain twice in twenty-four hours without any serious results, beginning with smallest doses. In treating syphilis thus, with the proper local treatment of shankers and buboes, I have had good success, and I have never noticed any secondary or tertiary symptoms to appear afterward. I generally make a solution by dissolving one grain

of the mercury in two scruples of distilled water, and graduate the dose accordingly.

In reference to the salts of quinine, it has become a very common occurrence to use them hypodermically. Especially has the sulphate been used in congestive malarial diseases. The muriate of quinia is the most soluble, and we think the best to use by this method of administration. To use the sulphate successfully, and at the same time avoid the resulting abscesses so common after its use, I generally dissolve thirty grains of quinine in two scruples of water, with the addition of fifteen or twenty drops of hydrachloric acid, and give from three to eight grains at one injection. I have treated several cases of *pernicious fever* myself—commonly called congestive chills—in my practice at Union City, Tenn., and witnessed many cases likewise treated in the New Orleans Charity Hospital clinics, always successfully, excepting one case, which had been in a comatose condition several hours previous to its entrance into the hospital, and the heart's action had about ceased before anything could be done for it. At this juncture I can not omit the notice of the use of brandy or spirits hypodermically in certain kinds of cases, and I firmly believe that, during my checkered practice, I have really saved the lives of several patients by the timely administration of stimulants into the circulation through the medium of the hypodermic syringe.

I could easily prolong this dissertation upon the present subject by calling your attention to the experience of many other physicians, but what I have written is sufficient to illustrate how broad is the field over which hypodermic medication has extended. I can not deny but that this mode of administering remedies has its peculiar objections as well as its advantages. That frequently the patients object to the pain it causes, and that every now and then we are bothered with abscesses; but at the same time there are a great many cases of emergency, where probably life or death hangs upon a few moments' operation of some drug, whereof if the physician did not possess the hypodermic instrument he would be utterly powerless to afford any relief, or to save a human life. In

reference to the laws laid down in this article to the various remedies mentioned I have tested many of them myself, and they have further been proven by divers other physicians and scientists. Among them who have thus interested themselves are Profs. Von Shoff and Betenheim and Urild, of Germany; Prof. Joseph Jones, Prof. S. M. Bemiss, and Prof. T. G. Richardson, of the University of Louisiana. In conclusion, I would say that if I were compelled to undergo the loss of the benefits accruiug from the use of some one of the many surgical and medicinal remedies now in general use, I could more easily afford to lose those of many other instruments of equal celebrity, than spare those of that valuable little instrument called the hypodermic syringe. Thanking you, gentlemen, for your kind and generous attention, I most respectfully submit the subject to you for your further discussion.

ECLECTIC DEPARTMENT.

"Carpere et colligere."

Hahnemann and Homœopathy. By JOHN C. PETERS, M. D., President of the Medical Society of the County of New York; President of the N. Y. Neurological Society, etc.

Hahnemann's residence in Konigslutter was also marked by his assumed discovery of Belladonna as a preservative against scarlet fever. The proof is as follows: In a family of four children, three sickened with the disease, but the fourth, who was taking Belladonna at the time for an eruption upon her fingers, escaped. In another family of eight children, three were seized with the epidemic, but the five remaining children to whom Hahnemann at once gave Belladonha, also escaped. He says, numerous other cases, but he gives no details, presented themselves in which this specific preventive remedy never failed, and he publishes cases of common sore throat and stomach ache as examples of incipient scarlet fever.

Dudgeon says the mode he adopted of drawing the atten-

tion of physicians to his newly discovered prophylactic was singular. He did not divulge the name of the medicine, but announced for publication a pamphlet (of about 16 pages) upon the subject, and advertised in the public newspapers for subscribers, promising to publish the little pamphlet and reveal the name of the preservative, as soon as he got three hundred subscribers at a Friederich d'or, or about $3.50 a piece. Hahnemann says scarcely a fourth part of the number he expected, subscribed for it. He then arranged that the bona fide subscribers should receive a portion of this concealed and secret medicine with a small paper of directions how to use it, in order to satisfy them in case his pamphlet on the subject should not be published. The subscribers consisted of about thirty physicians who had epidemics of scarlet fever in their neighborhoods, and a good many private individuals who wished to protect their families. Hahnemann, who up to this time had contributed much to Hufeland's Medical Journal, now begged his subscribers to publish the result of their experiments in a prominent public newspaper, the *Reichs-Anzeiger*. The majority of the medical profession resented these unusual procedures, as selfish, avaricious and quackish, and took no notice of Hahnemann or his prophylactic. But Drs. Jani, of Gera, and Muller, of Plauen, published cases in which it had failed, especially one in which three children in one family were attacked with scarlet fever while using it; but thirty other children in nine families who had NOT been exposed to the disease escaped. Hahnemann proclaims that this success is miraculous; and falsely assures us that when scarlet fever prevails, not two children in a hund red escape, whether they have been exposed to the infection or not. He supposed that the 24th millionth part of a grain of dry belladonna juice which he sent to his subscribers, in return for their money, might have lost its power from having been kept too long, or from not having been administered properly; for he said the medicine lost its power in an incredible way if it was merely dropped on sugar or given in a spoon; but it was always to be mixed in from one to four table-spoonfuls of *beer* or water by *brisk*, long continued stirring, and thereby

alone become right powerful; and even the well stirred dose lost its power in a few hours (*see Lesser Writings, p.* 362 *to* 385.)

Hartmann says Hahnemann was entreated in vain for two or three years to reveal the name of his prophylactic, but he had no desire to yield his emoluments and fame to others. He consequently met with much justifiable neglect and contempt, and some well merited abuse, which he resented in an almost blasphemous manner in his article on Professional Liberality (p. 368).

The above is the simple and disgraceful story of the origin of the use of Belladonna as a preservative against scarlet fever, as given by two of his disciples, Dudgeon and Hartmann. They seem to be utterly unconscious of the cupidity, inhumanity and quackishness of Hahnemann. Kleinert, in his History of Homœpathy, Leipzig, 1861 p. 57, is equally obtuse. He says: "Hahnemann announced the publication of a pamphlet on a newly discovered preventive of scarlet fever. The subscriptions were to be paid in advance; the publication was not to be issued until 300 subscribers had been obtained, and then only would the still secret remedy be made known." This attempt at black-mail did not meet with much success; very few physicians subscribed, while many reproached him for his cupidity and selftshness. Kleinert exclaims: "How did this much abused man revenge himself? He published his pamphlet in 1801, i. e. six years after he had made and announced his discovery, and thus surrendered the little pecuniary benefit which he might still have derived from it. During those long five years he allowed scarlet fever to pursue its ravages among all those children whose parents or physicians could or would not pay him his price for his miserable secret."

Hahnemann, in his pamphlet on the cure and prevention of scarlet fever, published at Gotha, in 1801, and republished in his Lesser Writings (Radde, New York, 1852, p. 369), attempted to account for the failures which had been reported of Belladonna. He says: The extract of Belladonna which I caused to be delivered to my subscribers, might have lost its power by the great distances it was sometimes sent, and by the long period it may have been kept.

2d. The precautions laid down in his pamphlet could not all be enumerated on a small paper of directions, in which, on account of the danger of misusing the medicine, it was necessary to direct that only the very smallest doses should be administered.

3d. Moreover, it is probable that the thorough mixture of the few drops, with a sufficient quantity of the fluid in which it always should be taken, was generally neglected; a neglect which makes this and every other medicine many hundred times less powerful than they would be, were they properly combined with the diluting fluid.

4th. In addition, very inclement weather, and in general what is understood as taking cold, or getting chill, presents obstacles, by no means slight, to the power of Belladonna in preventing the scarlet fever.

5th. In this, as in all other epidemics, the scarlet fever showed itself to be the most spreading and contagious of all the maladies which befall children. If a single child was afflicted with it, *not one* of its brothers or sisters ever remained exempt?? nor did it fail to effect other children who came too close to the patients, or to things which had come in contact with their exhalations. Among children under 15 years of age that may be exposed to contagion in epidemics of scarlet fever, *hardly one in a thousand escapes??* the disease, though they may only be affected with the specific sore throat, or a combination of some of the other symptoms. In the mild form, it generally remained mild in the whole family living together. There occurred a slight feeling of weariness, a kind of faintheartedness, some difficulty in swallowing, slight fever and rash for three or four days, a little desquamation on the fingers, and almost nowhere else. Towards evening the patients laid down in bed for a short time, but the rest of the day they went about. Their sleep was pretty tranquil, the bowels slightly tight, and the appetite usually not much diminished. We will see anon that this mild form is the one in which Belladonna was supposed to be so very efficacious; while scarlitina maligna was declared to be Purpura miliaris, and not amenable to Belladonna.

6th. From 15 to 20 years of age, Hahnemann says scarcely one in 500 is spared? from 20 to 30 years the inflection becomes more and more rare. Those above 30 years of age were generally exempt.

Such is Hahnemann's greatly exaggerated account of the contagion of scarlet fever.

To prevent this terrible form of mild scarlet fever, the fresh leaves of the *wild* Belladonna, before the flowers are blown, were bruised in a mortar to a pulp, the juice expressed through linen and immediately spread on porcelain plates, and exposed to a draught of dry air until hardened. One grain of this extract was then dissolved in 100 drops of distilled water, with the addition of 300 drops of dilute alcohol (1 to 5), and diligently shaken. This so-called terrible solution of Belladonna, viz: one grain to the ounce, was much too strong to be used. The *medium* solution was also too strong; but the *weak* solution, each drop of which contained the 24 millionth part of a grain of the dry Belladonna juice, was declared to be the true prophylactic remedy for scarlet fever. And this is the preparation, a few drops of which Hahnemann sent to his subscribers for $3.50 each. One drop was to be given to children under one year old, every three days, or seventy-two hours; two drops to those one year old; three drops to those from two to three years old; four drops to children four years old, and so on. This medication was to be kept up until four or five weeks after the epidemic had ceased. He calmly says these drops of the 24 millionth of a grain do not disturb the health of the children, unless they take vegetable acids, which enormously increases the power of this terrible preparation of Belladonna. But they may be given in water, BEER or milk, but they must be well *stirred*. "It is only by *stirring*, by brisk, long continued *stirring* in water, BEER or milk, that a liquid medicine becomes right powerful." It is scarcely creditable, he says, how much this Belladonna, and every other medicine, loses in power if it is merely dropped on the tongue, or given on sugar, or dropped into a liquid without stirring it well up in it. But the 24 millionth of a grain of Belladonna is not neutralized by a glass of BEER, if it be well stirred up in it!!!

When cases of the failure of Belladonna to prevent or cure malignant scarlet fever began to accumulate, Hahnemann declared in 1808, (see Lesser Writings, p. 479), that "the malignant fever that has prevailed in Germany for eight years and proved so fatal to many thousands of children and older persons, often so unexpectedly, so rapidly, and with symptoms never before heard of under such circumstances, this murderous disease *termed scarlet fever by almost* every one, is really *anything but scarlet fever.* It is a new disease *never seen in Germany before the year* 1800." This is a new disease he again exclaims, and is widely different from the old genuine scarlet fever. "This disease is new among us, I (Hahnemann) repeat."

He again says: "The real scarlet fever (p. 483) is an old disease which has been accurately observed in Germany for centuries. It seldom prevailed in malignant, but often in *mild*, sometimes in perfectly mild epidemics, as described by Sydenham, De Gorter, Neuter and Junker, *scarcely proving fatal to one child in a thousand.* In this old, true scarlet fever, Belladonna is useful both as a prophylactic and as a remedy. It would be foolish," he says, "to judge of the power of Belladonna from its administration in this new miliary purple fever, which, as we (Hahneman only) see, is anything but scarlet fever," but which every one else saw was malignant scarlet fever.

Finally, in 1821, Hahnemann said (see Lesser Writings, p. 695): "Almost all those, without exception??? who are affected by the red or purple miliary fever, falsely *called scarlet fever*, that is so often fatal, may be rescued from death by the octillionth of a drop of aconite, given alternately with tincture of raw coffee, especially when there is increasing restlessness, pains in the head and throat, *with a disposition to weep.*"

Well may we weep over such folly.

Next Hahnemann declared that Belladonna would prevent, but would not cure, mild scarlet fever. If the child vomited (see Lesser Writings, p. 375), a small piece of paper from one-half to one inch square, moistened with the strong tinc-

ture of opium, was to be laid on the pit of the stomach and left there until it dried, or about one minute. Then the paper should be destroyed, for fear that the child might swallow it. If the child did not vomit, one five millionth of a grain of opium was given every four or eight hours. But if it was sleepless, with a want of appetite, nausea, intolerable lachrymose—peevishness and groaning, Ipecac was the remedy, although it has no homœopathic relation to scarlet fever; nor has opium.

If such treatment did not remove the groaning and peevishness of the patients, the perusal of it certainly produced them in those able and practical men, who saw hundreds and thousands of cases of real disease where Hahnemann saw one, for up to this time, and long after, he had very little medical practice. He was a reader and a dreamer, not an experienced physician, and never became one.

Notwithstanding this tremendous trickery, the regular profession gave Belladonna a fair trial, both as a preventive and curative remedy against scarlet fever.

One of the latest authorities, Bartholow (see Mat. Med., Appleton, 1876, p. 285), says: "The points of resemblance between the action of Belladonna and scarlet fever are so superficial, and the differences so wide, that no more striking instance could be adduced of the uncertainty in the application of the homœopathic dogma, even admitting its truth. He is convinced that the so-called prophylactic power of Belladonna against scarlet fever has no real existence. He has seen too many instances of scarlet fever occur in subjects who had been given the remedy freely to permit him to come to any other conclusion. Belladonna is, however, he says, a useful remedy to relieve some of the symptoms in scarlatina. During the stage of eruption it is indicated when the pulse is feeble, the bodily powers depressed and the rash imperfectly evolved." Phillips (see Mat. Med., London, 1874, p. 64) says: "As a prophylactic against scarlet fever, after many trials, he considers Belladonna is often efficacious, provided the doses be sufficiently large to cause soreness or dryness of the throat, and provided also that the action be kept up during the whole time of exposure to the infections."

Dr. H. C. Wood, Jr. (see Mat. Med., 1874), says: "A great deal has been written about the value of Belladonna, and authorities differ much. He has no faith in the remedy, but it ought to be tried further. The best plan has been to dissolve two or three grains of the extract in an ounce of water, and give two drops daily to a child a year old, adding one drop for every year in older children up to twelve years."

Pareira (see Mat. Med., London, 1855) says: "The best evidence hitherto adduced in its favor must be admitted to be inconclusive. While, therefore, the facts brought forward in support of this prophylactic power are only negative, those which can be brought against it are positive; for he conceives that twenty cases of failure are more conclusive against it than one thousand of non-concurrence. Now Lehman, Barth, Wendt, Muhrbeck, Hoffman, Bock, and many others, declare that it has failed in their hands. The cases with which he is personally acquainted are decidedly against it. A remarkable failure is mentioned by Dr. Sigmond of a family of eleven persons who took the supposed specific, yet every individual contracted the disease."

George B. Wood (see Mat. Med., 1856, vol. 1, p. 805) says: "He has no confidence in it either as a remedy or prophylactic. Though he would accept a useful fact from the homœopathist, or any other foolish man whatever, or from any source, he would be disposed to subject it to a very close scrutiny. He thinks many in the regular profession have been somewhat hasty in adopting this scion of a false hypothesis. It is true that in many instances numbers of children to whom Belladonna has been given have escaped scarlatina, though exposed to the disease; but nothing is more common than a similar result when Belladonna has *not* been given. Every one knows, who has seen much of this disease, that it is extremely capricious in its choice of subjects, sometimes attacking all the children of a family, and *not unfrequently seizing upon one only of a large number* equally exposed to the cause. Besides numerous trials have been made by persons quite as deserving of credit, in which the use of Belladonna has entirely failed in securing the desired

exemption, which could not have happened were it possessed of the power ascribed to it. The mistake would be a very fatal one if, in reliance upon it, other means of securing exemption, such as common sense would suggest, should be neglected."

Waring (see Therapeutics, 1866, p. 140) strangely says: "The weight of testimony is decidedly in favor of its preventive action, but further observations are required. Bayle, in 1830, reported 2,027 cases, of whom 1,948 escaped, but the amount of exposure is not stated. Dusterberg purposely omitted giving Belladonna to one child in every family, and says *in almost, not quite*, every case, this child alone was seized with scarlet fever. Dr. Zeuch, in a hospital for children, after eighty-four had been attacked, gave Belladonna to the sixty-one remaining, and all escaped except one. This seems favorable, although as it is added 'the fever was raging around,' the disease was probably no longer in the building. Dr. Strevenant gave Belladonna to the children *of* a public school, and allowed them to have communication with other children of the village, where the disease was rife. All who took the Belladonna are said to have escaped, but the few who refused to take it were attacked. No numbers are given, and the amount of exposure is not stated. He used a solution of two grains of the extract in one scruple of water, and gave two drops daily to a child one year old, and an additional drop for each year of the child's age. The doses, although small, are not homœopathic, and prove, if they prove any thing, that the ridiculous doses of Hahnemann were not necessary. Dr. Newbigging is said to have succeeded in arresting the progress of an epidemic in a public institution after seclusion had completely failed. Favorable testimony is also given by Drs. Schenk, Kohler, Etmuller, Meglin, De Lens and Hufeland, while Lehmann, Hoffmann, Wendt and Sigmond failed with it."

Waring also says that Belladonna is a useful remedy in the treatment of scarlet fever. Drs. Burns, E. Wilson and Gardner speak well of it, the latter employing it in thirty cases with decided benefit. He gave one-quarter or one-half-grain

doses of the extract every three or six hours, till it produced dilatation of the pupils and a degree of stupor. And he did not allow low delirium, even from the first, to deter him from giving Belladonna. He used no other medicine except castor oil. Dr. Green, of Peckham, also testifies to the value of this treatment. It is very evident that these large doses do not kill, and doubtless were more useful than the infinitesimal doses, if any medicine at all was required, for the mortality in mild scarlet fever is only one in one hundred."

Dr. Alfred Stille (see Mat. Med., 1868, vol. 1, p. 786), says: "Hahnemann showed his unfitness for a liberal and generous profession by vending the remedy as a secret medicine, and this alleged power of Belladonna has done more perhaps than any thing else to sustain the impudent heresy of homœopathy. But the allegation, apart from the use of infinitessimal doses, is not in itself repugnant to belief, and if really true, is too important to be slighted. Still, in estimating the power of any agent to prevent a given event, it is necessary to know, first, the probabilities of that event taking place independently of all interference. In scarlatina (contrary to the false assertion of Hahnemann), the degree of contagiousness is not ascertained; *for we constantly see families in which one or two persons only, out of perhaps eight or ten, are attacked.* The contagiousness of scarlet fever is at times very uncertain. Therefore, if Belladonna were administered to all the members of a family, of which one had already had the disease, it would be impossible to say, if the disorder did not extend, whether its arrest were owing to the exhibition of the medicine or not. He quotes Bayles' 2,027 cases, and says they may be after all of negative value, as others, like Lehman, failed with it. He quotes Drs. Ewing and Hardy, who gave Belladonna to exactly 250 children, and less than one-half dozen had the disease, and they but mildly. Those families—(number not mentioned)—who did not take the preparation, were with but scarcely an exception affected." There is much playing fast and loose with statistics here.

In an orphan asylum, with 114 inmates, the arrest of the epidemic is ascribed to the preserving use of Belladonna

Dr. J. C. Morris gave it to one-half (number not mentioned) of the children in the Preston Retreat, and found that fifty-three per cent., or more than half were nevertheless attacked; while seventy-three per cent., or two-thirds who did not take it were seized. Belladonna seems to have saved only twenty per cent., and to have failed in fifty-three per cent. Drs. Wood and Alley tried similar experiments in two orphan asylums, and found that there was no manifest difference between those who did and those who did not take it as to their susceptibility to the contagion. Many escaped who did not take it, and Belladonna seemed *useless*. Hufeland, in Germany, and Guersant, in France, were always successful with it; numbers not stated. Guersant remarked the almost certain immunity of those who took Belladonna.

Dr. Joseph Frank says the use of Hahnemann's ridiculous infinitessimal doses is repugnant to common sense, and he was opposed to doubtful experiments on healthy children. The numerous apparently successful trials were not made with the phantom doses of homœopathy, but with such as, although minute, were sufficient in a great many instances to produce an eruption on the skin and dryness of the throat, and yet, without in a solitary case giving rise to unpleasant," much less dangerous symptoms.

Stille finally concludes that we may use Belladonna whenever scarlet fever breaks out in boarding houses, orphan asylums, tenement houses, etc. It is not pretended that the protection is certain or permanent.

Meigs and Pepper's careful observations (see Diseases of Children, p. 668) prove that many of Hahnemann's statements are exaggerated and false. They say that its contagiousness is much less than either small-pox, measles, whooping cough or chicken-pox. They have frequently known children exposed directly, and for a considerable length of time, to the infection, to escape entirely. The mortality, without the use of Belladonna, was eleven out of sixteen of the most malignant cases, fourteen out of forty-one of the less grave cases, *while in two hundred and six mild cases only three proved fatal.* It is in the latter that Belladonna

has achieved all its so-called triumphs, and in which little or no treatment is required. Sydenham said it was fatal only through the officiousness of ignorant or rash physicians. Homœopathy, or Nopathy, is useful, or rather not useful, in mild croup, and useless in membraneous croup; useful or not useful in mild diptheria, and powerless in the malignant variety. If it were not for the large number of all diseases which nature cures, homœopathy would not live for a day; it would be found powerless in all really dangerous disorders. As a practical man Hahnemann was ignorant indeed. He thought, or forced himself to believe, that all diseases were beyond the control of nature, and hence attributed the most extraordinary virtues to his infinitessimal doses simply because many cases recovered. He was not only ignorant of all real knowledge of disease, but he was mercenary, quackish and selfish. He did nothing except for his own self-glorification and emolument. He purposely deceived himself and cruelly deceived the public.

Dr. Condie tried Belladonna, but although redness and dryness of the throat, and a diffuse scarlet efflorescence were produced in the majority of cases, he never found it to exert the slightest influence in mitigating the character or preventing the occurrence of scarlet fever. The experiments were made during the prevalenee of the disease, and in numerous instances the subjects of them were attacked. In one case the efflorescence was kept up by the use of Belladonna forty-eight hours, and in a week afterward this individual took the disease in its most violent form, and died on the fourth day. This experience should be conclusive, and my own experience is like it. I should prefer any other remedy than Belladonna. I believe that simple sweet spirits of nitre and the right use of disinfectants are far more safe and useful. The physician then has the most unbounded assurance that he is doing good, and certainly running no risk of doing harm, or of complicating or confusing his cases. Singularly enough Meigs and Pepper rather favor the use of Belladonna, and supply a case which is inconclusive indeed in the light of what they have e o: e said. In one family they gave it to nine children ex-

posed to the disease, either from being in the house or in the room of the patient, and eight escaped the fever, and the one who took it had it very mildly. They do not tell us how many went into the sick-room.

Rilliet and Barthez weakly conclude that it is worthy of trial. Dr. Porcher, of Charleston, examined four hundred volumes, and allowed himself to be deceived by coincidences, and by the false and exaggerated testimony of credulous men. He says, if the efficacy of the remedy is only problematical, none should hesitate to use measures which are so simple and so safe. But there are better, safer and clearer common sense measures which should be relied upon before problematical measures are resorted to. It is a neglect of these measures, and not the rejection of Belladonna, which is "a violation of those sacred obligations which force us to leave nothing untried which may contribute so largely to the mitigation or eradication of one of the severest inflictions of the hand of God." We doubt if that hand will be turned aside by the twenty-four millionth of a grain of Belladonna. Any remedy which, like digitalis or nitre, will eliminate the poison of the disease through the kidneys, is far more in unison with that common sense with which our Creator has endowed us. Any good disinfectant is more useful than phantom doses.

Finally, Dr. Caspar Morris, in his Essay on Scarlet Fever, Philadelphia, 1858, says, page 34: "The instances in which single cases occur in a large family or school, without extension to others, even where no precautionary measures are adopted, are sufficiently numerous to disprove the (unvarying) influence of contagion." It often prevails in a mild manner, or entirely disappears for several years, until its malignancy is almost forgotten, or may even be doubted. p. 39. In the House of Refuge in Philadelphia, in 1852, only 60 inmates in more than 200 were attacked, with only one fatal case (p. 45), yet no Belladonna was used in any way. On page 157 he tells us, that a sudden death by malignant scarlet fever occurred in a lodging-house in which several families with many children boarded together. Belladonna was given to one of these families, but Dr. Morris declined to give it to

the rest. No second case of scarlet fever occurred in the entire household. Had the other families joined the first in the use of Belladonna, it would have furnished proof as satisfactory as any that has been reported in favor of the treatment. Six weeks after, the children who had taken Belladonna were all seriously ill with scarlet fever of a most violent type. In an asylum for children, with 49 inmates, 6 were attacked within a few hours by malignant scarlet fever; to 24 of the remaining no Belladonna was given, of whom 18 took the disease with great severity; while of 19 who did take it 11 were affected with equal violence.

The only son of Dr. Lehman took Belladonna uninterruptedly for several months, when he was attacked with scarlet fever and died on the fourth day. In a family of four children one was attacked, and the remaining three were immediately put on the use of Belladonna. On the 21st day, two of the three were attacked in a more violent form than the first case. Dr. West, of London, gave Belladonna to 75 boys out of 151, and withheld it from 76. There were two seizures in each class. Dr. Sutton gave Belladonna as a prophylactic; but seeing children attacked with the disease while taking the medicine, he lost all confidence in it. (p. 160).

Of 124 children to whom Berndt gave it 14 took the disease, or about one in nine; while of West's case who did not take it 1 in 75 were seized; hence one might almost assume that Belladonna rendered children much more susceptible to scarlet fever. Hillen Kamp had only 5 out of 120 who took Belladonna affected with scarlet fever, but he does not tell us how much the others were exposed; but that is one in 24, or three times as many as West's cases who did not take it. (p. 159).

In Reynold's System of Medicine, No. 1, p. 149, we read: "In degree of contagiousness scarlet fever takes a place between measles and whooping cough above, and typhus fever below, i. e., it is less contagious than measles and whooping cough."

All the cases recorded by Hahnemann and his disciples, of

the prevention of scarlet fever by infinitessimal doses, must be regarded simply as escapes. They contribute to our knowledge of the natural history of the disease, and mark the capriciousness of its contagion. The same holds true of all the experiments by credulous regular physicians with a solution of one grain of the extract of Belladonna to one ounce of water, or the 480th of a grain. If this large class is swept away, as it should be, but little remains that has the slightest resemblance to reliable experimentation, and that is more than counterbalanced by the numerous failures, of which I have seen some lamentable instances.

Digitalis is a far more safe, reliable and rational remedy than Belladonna.

Hahnemann scarcely deserves credit for suggesting a preservative remedy against scarlet fever, for Bœrhaave was long engaged in the search for one. But he has richly earned the greatest reprobation, for his mercenary spirit, for his gross exaggeration, his numberless false and erroneous statements, for his unutterable folly about infinitessimal doses, and for his audacity and untruthfulness in speaking in such positive terms on so many points, where his practical experience was so slight. A few cases were always spoken of as if they were hundreds or thousands; and every notion which came into his head was at once put forth as an impregnable truth.

Hahneman's subscribers purchased, at a high price, a remedy to secure them against *malignant* scarlet fever. Five years afterward he coolly tells them that it was only against *mild* scarlet fever, which only kills one in 100 or 1,000, and that they were fools to expect anything else.

And 20 years afterwards he attempted to force them again into treating malignant scarlet fever with infinitessimal doses of Aconite in coffee.

The health reports of this city furnish the best data about the degree of contagiousness of scarlet fever. In 1873, 3,215 cases occurred in 2,205 houses,. No less than 1,655 houses had a single case only: 2 cases each, occurred in 368 houses only; 3 cases each, in only 112 houses; 4 cases each, in 42 houses; 5 cases each, in 16 houses; 6 cases in 6 houses; 7

cases in 2 houses; 8 cases in 1 house; 9 cases in 2 houses, and 14 cases in 1 house only. If Belladonna had been given in the 1,655 houses in which one case only appeared, it would have been supposed that it had prevented the disease in 1,655 instances; a larger number of cases than has even been advanced in favor of it.

ART. II.—*Warm and Hot Water in the Treatment of Lacerated and Contused Wounds.* By FRANK H. HAMILTON, A. M., M. D., LL. D., Surgeon to the Hospital, Etc. A Clinical Lecture delivered at Bellevue Hospital, N. Y.

Dr. Hamilton presented two cases to the class, illustrating in their results, the successful treatment of lacerated and contused wounds by warm and hot water dressings. The cases are as follows, taken from the hospital records by the house surgeon, Dr. E. Hochheimer.

CASE 1. John Mayer, act 20, was run over by two platform cars December 18, 1877. He was placed under the care of a physician at Hunter's Point, but refused to submit to an amputation. On the third day he was admitted to Bellevue Hospital. He was pale, with a complexion slightly bronzed; his breath had a slight saccharine odor; the surface of the body was cold, and his pulse feeble and rapid. He was delirous, talking in a low voice, and incoherently. A lacerated wound was found on his right thigh just above the knee, ten inches long and closed by sutures. The whole extent of the wound and the underlying tissues to the bone, were gangrenous.

His left thigh was broken three inches above the knee, the upper fragment having descended until it penetrated the joint. The whole limb was swollen, discolored, emphysematous, and pulseless. His constitution did not warrant an amputation, and as death was anticipated within a few hours, a very little was done except to nourish and sustain the system. On the following day his mind was more clear, but the gangrene was still extending in both limbs. Amputation was advised, but the parents refused their consent.

December 23d. The fifth day since the accident. Gangrene was still extending in the left leg involving the whole limb as high as the knee, and the discoloration, swelling and emphysema extending as high as the groin. It was now that the left leg and thigh were enveloped in thick masses of cotton batting, with water at the temperature of 110° F. The lacerated wound on the right thigh was treated in the same manner. Outside of the cotton batting each limb was enclosed in oil silk. The hot water was directed to be renewed every 20 or 30 minutes day and night.

December 25th—The discoloration, swelling, and emphysema had nearly disappeared from the upper part of the left thigh, and a line of demarcation had commenced forming at the knee-joint. The delirium was abating and he began to take food. On December 29th there was no delirium, and he expressed himself as feeling well.

January 6th, 1878.—Thirteen days after the commencement of the hot water treatment, the separation at the left knee-joint was nearly completed, and with the scissors, assisted by the handle of the scalpel, Dr. Hamilton severed the remaining sloughing bands, and removed the leg without inflicting pain or causing the loss of more than a few drops of blood; the gangrenous slough had already separated from the opposite thigh. The progress of the case continued, interrupted only by the occurrence of a few small abscesses on the right limb, until the 28th of February, when the patella and lower fragment were removed by Dr. Hamilton.

May 1st.—Dr. Hamilton removed the projecting lower end of the upper fragment, which had become necrosed, and had spontaneously separated from the living bone. At or prior to this time the hot water applications had been suspended, and the balsam of Peru applied to the granulating surfaces.

June 24th.—Resection of about four inches of the lower end of the femur was made to secure a better stump. The operation was followed after 36 hours by a profuse secondary hemorrhage from the femoral artery. Dr. Hamilton opened the wound, retied the artery, and the patient made a rapid recovery. He has now a perfect stump and is walking on an artificial limb.

Case 2.—Patrick B., aet. 30, married. Admitted June 6, 1878. Ireland. Laborer. About two hours before admission patient was injured by having a ton of coal, contained in a tub which he was hoisting, fall on his left foot. The wound bled quite freely so that the ambulance-surgeon, who brought him to the Hospital, applied a compress and bandage.

On admission, he was found to have received a contused and lacerated wound of the left foot, involving a great part of the inner side; another, not quite so extensive, on the outer side, while the skin of the sole was dissected up to a considerable extent.

By the second day after his admission, the hemorrhage having ceased under the compress and bandage, hot fomentations were applied which were exchanged for the hot water bath at a temperature of about 100° F., on the 4th day. At same time a gangrenous strip about 1½ inches wide became evident on the sole, and was thrown off on the 16th day, when it became apparent that the fifth metatarsal bone and proximal phalanx of the little toe had been fractured. The foot was kept in hot water till the 12th day, when yeast poultices were applied, but foot still immersed two hours daily, the poultices being temporarily removed.

After the slough had separated, a clean granulating surface was left, which was dressed with balsam of Peru.

August 11th a portion of fifth metatarsal, and August 23d a portion of proximal phalanx of little toe came away. Granulation and cicatrization has progressed steadily, and the wound is now almost completely closed.

Dr. Hamilton, in commenting upon these cases, remarked, that in his large experience in military and civil practice, he had never seen a patient recover from the condition in which case No. 1 was found on the third, fourth and fifth days after the accident, whether amputation was practised or not, and there was no other means known to him in surgical science which, in his opinion, could have saved the patient from death, except the hot water treatment. Dr. Hamilton then referred briefly to several other cases of arrest of gangrene

and spontaneous amputation under the hot water treatment in his own practice, and which had been published by a Dr. Frederick E. Hyde, of this city, in the January and February numbers of the Buffalo Medical and Surgical Journal for 1876, and which has been published in pamphlet form by Wm. Wood & Co.

Dr. Hamilton further remarked that this mode of treatment of lacerated and contused wounds was not new with him; that it had been practiced and recommended by Hippocrates, by Celsus, by Galen, and, in the ninth century, by Rhazes. Frequent allusion has been made to it by later writers, but more especially by Von Langenbeck, Billroth and Schede, the latter of whom has written an interesting pamphlet upon the subject. But certainly none of the later writers have considered the value of water at a temperature so high as 100° F., their observations having been limited to the use of warm water alone, and not to the use of hot water, properly so called. Indeed, while they have spoken of the efficacy of warm water in the reduction of inflammatory action and the prevention of pyemia and septicemia, they have scarcely alluded to its efficacy in the treatment of traumatic erysipelas, and they seem not to have had any experience in the use of *hot* water as a means of arresting gangrene. My own personal experience alone has led me to the discovery of the value of hot water in traumatic gangrene. Incidentally I would remark that the treatment of traumatic erysipelas with warm water dressings has been fully illustrated in a paper written by Dr. A. H. Goelet, of New York, published in the American Medical Weekly, May 15th, 1875, his experience having been drawn chiefly from cases treated by me in one of the Reception Hospitals of this city, while I was acting as Surgeon-in-Chief of the Reception Hospitals, and Dr. Goelet was acting in the capacity of House Surgeon. I may summarize the accidents in surgery connected with lacerated and contused wounds, which either warm or hot water have exhibited a wonderful power to control, as traumatic inflammation, traumatic erysipelatous inflammation, septicemia, pyemia and gangrene.

In using warm or hot water, wherever it is practicable, the bath or complete submersion of the injured member is always to be preferred, the limb being suspended in the water without sutures, adhesive strips, bandages or dressings of any kind. If there should be any cause for delay after the infliction of a severe lacerated wound in resorting to the bath, it will be because there might be some apprehension of hemorrhage being thereby invited and promoted; but if the vessels are properly tied this delay need not extend beyond twelve or twenty-four hours.

It is seldom found necessary to continue the bath beyond the seventh or tenth day, or beyond the period of active inflammation, and it is even sometimes quite objectionable to continue it beyond this period on account of the œdema which is apt to ensue, the œdema being in part due to the necessarily dependent position of the limb, and also in part to the endosmosis of the water by the open tissues. After this period the warm water or hot water (as the case may demand) fomentations are to be preferred, the limb being laid, as in the case of an arm, upon a pillow covered with oil-cloth, and enveloped with large masses of cotton-batting saturated with water. Even during the period of acute inflammation, if the patient becomes weary of the confinement of the limb to the bath, the fomentations may be substituted during the night, or any other time when it may seem to be necessary.

It may interest you to know that, according to recent observations, hot water, or water at a temperature as high as can be well borne, has found other applications. Dr. Emmet, of this city, and the late Dr. Pitcher, of Detroit, have employed hot water injections, with immediate and often permanent relief, in cases of vaginal eczema and other vaginal irritations. Dr. Agnew, of this city, has employed it with great advantage in certain inflammations of the structures of the eye, and Dr. Piffard has recommended it in eczema of various parts of the body, and I have myself been long familiar with its use in this and other forms of cutaneous eruptions. Its efficacy in allaying the stubborn pruritis of

almost all cutaneous affections has long been a matter of observation with me, but in order to be efficacious it must be applied with a sponge, and at a temperature which is, for a moment, actually painful. The bathing tub, which is placed before you, intended for the foot and leg, was imported from Germany, but it has certain defects which I have sought to remedy, and Mr. Reynders, of this city, now makes, under my instruction, a much more simple, less expensive and more useful bath.*

ABSTRACT DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."

CONDUCTED BY EDWARD MILLER, M. D., LOUISVILLE, KY.

On "Lithotrity by a Single Operation." By W. H. Van Buren, M. D.—According to Dr. Van Buren, there is a tendency of late years, since the adoption of lithotrity, to diminish the number of sittings, and to avoid cases requiring frequent repetition of the crushings. The great specialist, Sir Henry Thompson, himself avows that in his last cases he had been reverting to lithotomy. Sir James Paget regards the operation as hardly susceptible of further improvement, and yet its results were often incomplete and unsatisfactory, hence he concluded for his own part, were he to recommence an active surgical life, "he would begin with lithotomy and reserve for lithotrity only those few cases in which the calculus could be got rid of in two or three sittings." The strongest points made against lithotrity are cystitis, "due to injury done to the mucous membrane by sharp fragments of stone, and by continued instrumentation," the stone liable to be developed in old people, with a continuation of vesical irritabil-

* In addition to the papers upon the use of Warm and Hot Water in Surgery, in the foregoing clinical remarks, we would refer the reader to a paper by C. Henri Leonard, M. D., of Detroit, published in the Chicago Medical Journal for September, 1875, to a small pamphlet issued by John Reynders & Co., of New York, and to editorial remarks in the Chicago Medical Journal for August, 1875.

ity and phosphatic deposit, and the liability to overlook minute fragments and the consequent unsatisfactory result. Do these objections justify recurrence to lithotomy as their only remedy? Can not lithotrity be rendered less imperfect? There is reason to believe that a discovery by an American surgeon may possibly take away from lithotrity its chief objection, and prove that as an operation it is yet susceptible of improvement. The evidence adduced by Prof. Bigelow, of Harvard, demonstrates "a tolerance by the bladder of protracted manipulation, which has not been hitherto recognized." Accordingly, Prof. Bigelow crushes the stone and removes the fragments at one prolonged sitting under ether, thoroughly washing out the bladder with instruments devised for the purpose, and removing all detritus. Dr. Van Buren then details six cases treated successfully in this manner by himself, and concludes that the safety of Prof. Bigelow's proposition of rapid lithotrity necessarily demonstrates "that the cystitis" which so often occurs after first crushings, regarded by Thompson as one of the serious defects of lithotrity, is due to the irritation of sharp fragments and not to continued instrumentation. 2. That the more thorough evacuation of the bladder, attainable by the Bigelow method, lessens materially the danger of leaving undiscovered fragments after lithotrity. As to atony after "lithotrity by a single operation," that is still an undecided point, though it is probably like the cystitis, kept up by the irritating fragments in the bladder and not by prolonged instrumentation.—*The Medical Review.*

The Nature and Treatment of Inebriety. By George M. Beard, M. D.—Dr. Beard regards this disease as belonging to a group of nervous diseases, including cerebral irritation, spinal irritation, general neuralgia, sick head-ache, physical hysteria, nervous exhaustion and nervous dyspepsia. These diseases, least common in Germany and France, oftener found in England, seem to have their especial home in the northern and eastern parts of the United States. The extremes of heat and cold in those States seem to have much to

do with the development of these diseases. Inebriety has four characteristics in common with other neuroses, viz. the automation of its symptoms, periodicity, transmissibility and relapsibility. The symptom of drinking too much is as much beyond the control of the sufferer as a sick head-ache. Whatever blame attaches to the patient must be when he does not resist the temptation when he could have successfully resisted. Some who inherit the disease must not of course be blamed for the sin of their ancestors. The treatment involves two principles. 1st. The avoidance of exciting causes. 2nd. The employment of sedatives and tonics. The exciting causes are alcoholic liquors and nerve exhausting influences, and these are best avoided in inebriates by entering an asylum, where the constant worry of the brain can be reduced to a minimum. The sedatives and tonics to be employed are fat, phosphorus, glycerine and electricity. Strychnia is indicated when a sudden cessation of drinking leaves the system debilitated. Coca would seem appropriate in similar cases, but has not yet been used enough to justify any conclusion as to its merits. The patient should have healthy surroundings, and plenty of good food, which more than any thing else is an antidote to alcohol. Mental therapeutics should not be neglected, and the patient should be encouraged and cheered.—*Quarterly Journal of Inebriates.*

The Treatment of Rodent Ulcer by Caustic Potassa. By W. G. MacConnel, M. D.—Dr. MacConnel says the disease is of interest from its frequency, and the disfigurement it causes, its favorite seat being the portion of the face around the eyes and nose. It has been described as rodent ulcer, cancerous ulcer, ulcer of the face, skin cancer, cancerine ulcer, ulcas exedens and is the noli me tangere of the older surgeons. The Dr. believes it is one of the varieties of carcinoma, and is to all intents and purposes, epitheliomatous in its character. It differs in its mode of extension, as the rodent ulcer extends equally in all directions, whilst epithelioma extends downwards and in two ways, partly by transfer, through the lymphatics of the cells to the cervical glands, and partly by its more rapid growth on the sides nearest the cen-

tral organs of circulation. The disease differs from the ordinary progress of cancer, by its slowness of growth, amount of pain, hemorrhage, the absence of fungus, fetor, glandular involvement and evidences of a cachexia. Whilst Dr. MacConnel considers the knife the proper remedy for epithelioma, he thinks there are cases, such as the above described lupus, in which it is not desirable or proper to operate, and the application of caustic potassa comes into play. His attention was called to the remedy by Dr. J. J. Maury, who also directed the application of an ointment of ung. hydrary cit. ℥i to cosmoline ℥i, after the sloughs occasioned by the caustic had been detached by the use of poultices. Dr. MacConnel then gives the details of six cases of rodent ulcer, all situated on the left side of the face, except one on the nose, which had existed for periods varying from one year to six. All of those ulcers were cured in a month, without internal medication, most of them by one application of the caustic, and after use of the ointment only one of the cases required two cauterizations.—*Med. & Surg. Reporter, Sept.* 21.

A New Searcher for Detecting Minute Fragments of Stone in the Bladder. By Edmund Andrews, A. M., M. D.—Soon after this instrument was shown for the first time, Sir Henry Thompson brought out an ingenious and interesting contrivance for the same purpose. His apparatus consists of an ordinary steel searcher attached to a microphone, and is complicated in construction. The microphone, as is well known, magnifies sound, and the contact of the sound with even a minute fragment is rendered distinctly audible. Dr. Andrews thinks his instrument, whilst superior in simplicity, is the equal in delicacy of perception to Sir Henry Thompson's. The instrument consists of a thin metallic tube like a catheter, only closed at the curved end, having no fenestra. The curve is rather abrupt, and the bend short, as in the ordinary steel searcher. The straight extremity is open, and is inserted into a small rubber tube two feet in length, and terminating in a ear-piece, such as is used by aural surgeons in listening to the tympanum. Dr.

Andrews gave an illustration of its use on a patient who had recently had symptoms of the descent of a stone through the left ureter. On introducing the metallic part of the instrument, and searching for the stone in the ordinary manner, not the faintest jar or sound could be felt or heard. On applying the ear-piece to the ear, and again searching for the stone, the "click" of some hard particle in the bladder, so small as to convey no sensation to the fingers, is heard with perfect distinctness. A small lithotrite being then introduced into the bladder, some hard object was caught in its grasp, and, on being withdrawn, a little urinary calculus, scarcely larger than a grain of wheat, which would never have been found by the ordinary steel searcher, was found in its grasp. Probably the most important application of the new searcher will be in detecting the last minute fragment after the operation of lithotrity. If modified in form, it is also capable of discovering hard foreign bodies in the nostrils, the rectum, the stomach, in fistulas and in deep wounds, as well as in the trachea and bronchi, after tracheotomy. It can also be attached to probes, to detect fragments of necrosed bone in the bottoms of deep sinuses. When fistulas are crooked, and overhanging prostatic lobes obstruct the bladder, flexible tubes with metallic tips can be used, which, slipping around curves and obstructions, will send audible reports to the surgeon's ear of otherwise inaccessible foreign bodies.—*Medical and Surgical Reporter.*

Inoculation of Syphilis Through Mediate Contagion. By Fessenden N. Otis, M. D.—In a lecture delivered in the the College of Physicians and Surgeons of New York, Dr. Otis, after enumerating the various ways of transferring syphilis through direct contact, as well as by hereditary transmission, made some remarks upon the mediate contagion. He observed that cells diseased by the syphilitic virus may cling to substances with which they are brought in contact. All degraded animal cells can maintain their vitality for some time after removal from the organism (Beale). Any material, therefore, which has been in contact with the secretions or

blood of a syphilitic, may communicate syphilis to a healthy person, provided it is brought in contact with a lesion, however slight, of the skin or mucus membrane. The "mucus patch," a constitutional syphilitic lesion, frequent upon the lips, mouth and buccal region, is the most common source of mediate contagion. The saliva is thus impregnated, and through it a variety of domestic utensils have been the media of inoculation. In the same way, pipes passed from syphilitic mouths, cigars from syphilitic cigar-makers, canes, pencils, and even candy, have effected a syphilitic inoculation. Dr. Otis illustrates his lecture by giving the details of four cases, seen in consultation with other physicians. One of a young lady, with the initial lesion on the lower lip, from a lover's kiss; the second of a physician, in the mouth, from a friend's pipe; the third, in the mouth, after the use of dental instruments; the fourth, a merchant, on the lower lip, acquired from the habit of transferring his clerk's lead pencil to his mouth. Well-marked constitutional syphilis, with complete absence of any genital lesion, was present in each case. So simple a procedure as the depression of a patient's tongue with an unclean spatula, or vaccination with a dirty lancet, or any operation with a soiled knife, may be the means of carrying the syphilitic disease germ to a healthy person. In all cases, therefore, where the same instruments are in use for different persons, after thorough cleansing their passage through the flame of an alcohol lamp should be systematically practiced after every operation. The same procedure is equally indicated in regard to instruments used upon other mucus membranes, as those lining the urethra, the bladder, the rectum, the eye.—*The Medical Record.*

Virchow asked for the head of Hodel, the assassin, and was refused for moral reasons. The *Medical Times and Gazette*, in commenting upon this matter, as well as upon an English decision, which refuses to allow casts to be taken of criminals' heads, says: "We are fast drifting into a sentimental cycle in which a false humanity plays too important a part."

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

Miscellaneous Cases. By G. F. Smith, M. D., Brownsville, Mo.

The index to Vol. VII of the American Medical Bi-Weekly caused me to re-read the report of a case of facial erysipelas, by F. K. Bailey, M. D., Knoxville, Tenn., and induces me to give an account of the following case from the similarity of treatment, but with a different result, depending no doubt, on the constitutions of the patients. Mine had arrived at the second great change of life, when the cessation of the function of menstruation reacts more or less deleteriously upon the entire organism, and so grave a disease as the one under consideration, occurring at the most unpropitious point, is very apt to prove a very formidable enemy. But it will be seen, that so far as the external manifestations of the malady were concerned, it yielded promptly and beautifully to the treatment, and it was only reserved for an after affection to claim the unfortunate victim.

Case 1.—Mrs. D—, aged 45, married, and the mother of three living children, originally of good constitution, but now much broken down by hard labor, a most excellent lady, lately immigrated to this place from Illinois, was taken with a chill May 4th, 1878, and as the fever continued with some soreness of the throat, I was called to see her on the 7th. Upon examination I found considerable inflammatory redness of the fauces, the nature of which I did not then recognize. A slight redness on the tip of the nose, she attributed to a sunburn. From the mode of attack, pain in the limbs, &c., I diagnosed intermittent fever, and prescribed a saline cathartic and

℞ Cinchona, sulph. ℥i;
Capsici: grs. xv.;
Pulv. Doveri; ℈ iss. M.
Ft. chart, No. 10, sig.

One powder 3 times a day, and wash of potass. chloras for her throat.

May 8th. Did not see the patient.

May 9th. Her husband came for me this morning to see his wife, saying he thought she had erysipelas, which proved but too true. Her throat presented the same redness, a little dusky now, as it did on my first visit, two days before, and had extended to the face via the left nostril, and over that side of the nose. Her pulse was about 105. (It will be observed that I report this from memory, having kept no notes, except the prescriptions which I obtained this morning from the drug store). I immediately placed her on the following treatment. Tinct. Ferri Perchloridi, 30 drops every hour in sweetened water, and apply over and an inch beyond the margin of swelling and redness.

℞. Argenti nitratis, ℈ ij;
Aquæ distillat, ʒ ij, M.

In the afternoon nearly the whole of the left cheek in front had become involved, closing left eye and advancing over the nose, encroaching somewhat on the right side of the face. Ordered the silver to be kept painted an inch or an inch and a half beyond its margin.

May 10th. Passed a very restless night, gave

℞. Morphiæ muriat, gr. ss;
Chloral hydrate, ℈vj;
Syrupi simplicis;
Aquæ, āā f. ʒ iss. M.

Sig. Tablespoonful every hour till sleep is produced.

Erysipelas had extended on left side to within an inch of the ear. Left eye completely closed, eyelids bulging out beyond the plane of the forehead, which is slightly involved about three-fourths of an inch above the orbit. On the right side, all the anterior part of the cheek and right eye considerably involved, pulse 105, temperature not taken. Also gave

℞. Quiniæ sulph., grs. xxiv;
Pulv. capsici, grs. vii, M;
Ft. chart, No. 6.
Sig. One powder every three hours.

May 11th. Disease about the same on left side, with pos-

sibly a slight increase and extension of swelling on the right; complains of the pepper in the powders, therefore gave

℞. Quiniæ sulph., grs. xxiv;
Pulv. capsici, grs. iij. M;
Ft. chart, No, 6;
Sig. One powder every three hours.

Pulse 90, temperature not taken.

May 12th. Pulse 90, no extension of the disease, complains of being nervous, gave

℞. Morphiæ muriatis, gr. j;
Chloral hydrat, ℈viij;
Fld. ext. valerian, f ℥iv;
Syrupi simplicis, f ℥i;
Aquæ, f ℥xij, M.
Sig. Tablespoonful as required.

May 13th. Swelling subsiding, pulse 90.

May 14th. Swelling rapidly subsiding in all parts except left eye, which is about the same, pulse 85. Just now, one of our good meaning and sympathetic old women, who are ever too accommodating to us, when the accommodations work most mischief, comes in with her infallible salve, and by dint of persuasion, induces the patient to allow her to apply the green-looking stuff to her eye, promising a magic cure or no harm.

May 15th. Left eye covered with streaks of green, beneath which ulcers are beginning to form. Ordered the salve washed off as clean as possible, and a bread poultice applied. Pulse 100. Veratrum viride, 5 drops every hour till pulse is reduced. Evening—Pulse 85; veratrum discontinued, complains of dryness of mouth and lips, no appetite.

℞. Glycerine f. ℥ss.;
Aquæ f. ℥iss. M.

for a mouth wash, and acid muriat. dil., 15 drops every two hours as a tonic and appetizer.

May 16th. Pulse 100. Tinct. digitalis, 5 drops every hour, eye still ulcerating, poultices continued, kidneys acting scantily, urine examined with a negative result, gave

℞. Potass. acetatis, ℥iss.;
Spts. etheris nitrosi;
Fld. ext. uvi. ursi.
Fld. ext. buchu, āā f. ℥i, M.
Sig. Teaspoonful every 4 hours.

May 17th. A little charcoal added to the bread poultice; the appearance of eye a little better; pulse 95; digitalis increased to 10 drops a dose, and 4 grains of quinine three times a day. 3 P. M.—Sent for in haste, the messenger stating that Mrs. D— was worse. I found her very restless and nervous. Her husband thought she had a chill. I gave her a tablespoonful of the chloral mixture, which soon calmed her nervousness and left her with a pulse of 100.

May 18th. Pulse 106; temperature 104; somewhat flighty.

℞. Quiniæ sulph. ℈ij;
Acid muriat dil., q. s.;
Potass. Bromidi, ℥ij;
Syr. Zinziberis, f. ℥i;
Aquæ, ad f. ℥iv. M.
Sig. Teaspoonful three times a day.

7. P. M. Pulse 110; temperature 104; more flighty.

May 19th. Pulse 116; temperature 104; very restless, except when chloral mixture is given. Has complained, frequently, during the night, of pain in the head, some opisthotonus, and considerable stupor. The patient, a stranger in our midst, and her family in a distant land, I felt it my duty to make them acquainted with the unfavorable prognosis, and requested a consultation. I was soon met by Dr. J. M. Pelot, who confirmed my prognosis and treatment. I should state that when her bowels did not move of their own accord they were assisted by either epsom salts or seidlitz powders every day till the 18th, when they failed to act.

Zuelzer in his articles on Erysipelas, Ziemssen's Encyclopædia, recommends large doses of quinine, three or four grains, several times a day when the fever runs high. I think the quinine in this case had a good effect in lowering the temperature, and regret that I did not use the thermometer to determine that fact.

Would erysipelatous fever suit this case better than erysipelas facies? There did not seem to be a corresponding fall of fever with the subsidence of the swelling, and even after the tumefaction had all subsided, with the exception of one eye, the fever was still as high as a general thing, though a few times the pulse was as low as 85; yet more frequently it ranged from 95 to 100. It might have been that the irritation set up in the eye on which the salve was applied was enough to keep the fever at its elevated standard. Certainly she grew progressively worse after its application until the evening of the 17th, when the chill occurred, after which I was exceedingly apprehensive of the result, and on the morning of the 19th the gravity of the symptoms was so plain that a wayfaring man, though a fool, seeing, might not err in a prognosis. Yet the subsequent course of this case will show that a medical solon, whose locks he says have been silvered in the harness, whose memory was able to recall to his mind many worse cases that again trod the earth and made "foot-prints on the sands of time"—able to recall them from an unlimited number of patients coming under his observation during thirty-five years of active and laborious practice, this undaunted memory, so capable of inspiring him with hopeful courage as to impel him to communicate the glad tidings to the bereaved family, that by a judicious application of medicines the glow of health would again return to her pale cheeks, and her expressions of pain dissolve in that sweet calm repose of perfect ease.

After our consultation, which left the family scarcely the shadow of a hope, in their dire distress of course would grasp at any thing that gave them the least promise. Through the influence of some very ingenious old women they were prevailed upon to send for an old hirsute, who comes and takes in the surroundings, finds out about our diagnosis, prognosis and treatment. He finds inflammation of the brain, and tells the family, if the case was his, he "would certainly get up a revulsive action on the bowels by means of active purgatives." Here was a patient sick for twelve days, with an action from the bowels daily, except the day before, and

with complete anorexia, and a proposition to actively purge her, her pulse being at 125 to 130 and weak. He was requested to take charge of the case, but refused unless I was sent for and would continue in it. Accordingly a messenger was dispatched for me, saying he thought they wanted me to consult with another doctor. Arriving, I was met in the front yard by an ancient sage, whose prehistoric countenance indicated the age to which the naturalist would assign him, and who supposed that I was "Mr." Smith, but was unable to "recognize" before, etc., etc. I assented that I was the veritable person I guessed he wanted to see. He said that he had examined the patient, and found it a bad case, but had told the family that there was some hope if a revulsive action were gotten up on the bowels by means of active purgatives. I told him to take charge of it and do all he could for the case. He did not wish to do that; wanted me to still come in conjunction with him. This I informed him I could not do; that he had already disabused the minds of the family in regard to my treatment, and gave them hope that he could do something for her; and if he had been disposed to act ethically with me, I could not subscribe to his course of treatment, and would, simply in justice to myself, retire from any further connection with the case. I saw his only interest in the case was the fee he could obtain, and nothing delights that class more than to get hitched in thusly, with no responsibility, nothing to lose and all to gain. I determined to make the family choose who should serve them, knowing full well where the choice would fall. I felt, too, like the editor of this journal, that it was better for one's patients to fall into the hands of a medical brother, even though that brother be a shyster, than into the hands of an undertaker. The choice, of course, fell to my friend, so I retired, leaving him triumphant with his arm sympathetically around the distressed husband's neck, his soothing voice a balm of Gilead, his gracious presence a physician near.

May 20th.—Madam Rumor reports that the patient is much better, and the doctor thinks will get well. In the evening I met the doctor, who informs me that the symptoms are much better and recovery highly probable.

May 21st.—Much worse; had several sinking spells during the night, when they thought she was dying. The doctor says she will die "about noon, at the turn of the day."

3:30 P. M.—With the consent of the family, Dr. W. P. King, Sedalia, Dr. Griffith, Kansas City, and myself, called to see the patient, but were informed by her husband that she was dying, and seeing the old doctor taking his leave, we left without seeing her.

May 22d.—Died at 3 o'clock.

CASE 2.—On the 23d of last February I was called to see Mrs. K., who had been delivered the previous Sunday morning by a midwife. I found that she had suffered a ruptured perineum, and had septicæmia and rapidly spreading peritonitis, of which she died on the following Sunday morning, one week after confinement. She was a small, slender woman—primipara—and gave birth to twins of the respective weights of two and a half and five pounds, the smaller dying on Wednesday after its birth. I was called down stairs on Friday evening to look at a patch of redness about the size of a silver five-cent piece on the larger one, and whilst speculating as to its probable nature, the little fellow's face and extremities became cyanotic, and with a few contortions of the features, respiration ceased. No pulse could be felt; to all appearances dead. A gasp, followed by others until breathing was re-established. Gave a little toddy, and afterward the redness and swelling extended so rapidly over the face that its advance was almost perceptible. Eye soon closed by the tumefaction, which continued until the whole of the face and head was involved. Death about twenty-six hours after its attack. No treatment except an anodyne and locally, tinct. iodine. Among all the works of authors accessible to me I can find no reference to erysipelas faciei in infants so young.

CASE 3.—Mrs. B., on April 12th, through mistake, gave her little girl, aged about two years, a teaspoonful of a mixture of equal parts of gum camphor and chloral hydrate, used as an external application for toothache and neuralgia, thinking she was giving a chill medicine. Supposing that I

was in the country, Dr. D. J. Parsons was called in, and a messenger sent in haste for me. Fortunately I had returned, and reached the case about a half hour after the administration of the poisonous dose, and found the patient in a state of profound insensibility, with stertorous respiration, loss of reflex excitability, and the doctor measuring out an emetic dose of powdered ipecac. I remarked to him the inability of the child to swallow, and the probability of its strangling should he attempt to give it, whereupon he instantaneously recollected himself and desisted, giving out, at the same time, that nothing could be done for it. I immediately procured some nitrite of amyl, and placed three drops on a handkerchief, and after two or three whiffs at it, the noisy respiration ceased, and the face became flushed, kept it up for a few minutes; then by means of a feather run down the throat, I produced vomiting, which I kept up as long as I could get any thing thrown off from the stomach, giving occasional whiffs at the amyl when any evidence showed itself of relapsing insensibility. As soon as it could swallow I gave an emetic of ipecac with as much warm water as I could get it to drink. Satisfied that it had vomited all the camphor and chloral it could, I gave a good dose of castor oil, which was repeated every three hours, with a view of working off that portion of the mixture that had passed the pylorus. I did not obtain an action with the oil until about ten hours after the first dose was given. How much of the mixture was left in the stomach I am not able to say. It took a common teaspoonful, which holds over a f. ʒ, and the mixture in composition contained sixty grains of each to the f. ʒ, and vomited about ten minutes afterward. Whether the amyl averted death or not I do not know, but it certainly counteracted the effects of the chloral.

Case 4.—When any physician in his practice encounters a blunder, or an accident, involving the destruction of human life, it is a very sad and lamentable thing. But when they do occur it is very satisfying to the younger members of the profession to be able to chronicle them, in the great majority of cases, in connection with the practice of those time-worn

veterans in medicine who pride themselves, publicly, on the great accuracy of the knowledge that their long experience has vouchsafed to them, and the satisfaction amounts to a pleasure, inasmuch as such things have to be done, when such veterans, on all occasions, compliment the young doctor thusly: "Oh, he's a young doctor; does the best he can, though," and all such commendatory expressions, calculated to give distinctive prominence to their unerring judgment, and hold in abeyance the efforts of those whom they are unwilling honorably and ethically to contend with. It is a noticeable and undeniable fact at this place (is it human nature?) that when an accident occurs, and a young doctor gets the call, in less than ten minutes you are confronted by one of these autocratic implacables, and if you don't meet him with a bold front and convince him of your authority in a very determined way, they will examine your patient very officiously, bluster around in the most conspicuous manner, and if they don't get an invitation to assist in the case, they will feel that interest in the patient to prompt them to make a few gratuitous visits in the name of friendly calls, so that the public is led to believe that the case is under their immediate supervision. When they retire it is supposed the patient is out of danger, and they are generously assisting the young doctor by giving him the case. It is no wonder, then, in the face of all this, whilst we feel the deepest sympathy with the bereaved, a death from chloroform at the hands of one of these gentlemen is peculiarly gratifying to us, so far as the M. D. is concerned; for had it occured in the practice of one of us we would long since have gone "where the woodbine twineth." Henry Browing died April 15, 1878, from the effects of chloroform during the operation of circumcision, aged fifteen years, Dr. D. J. Parsons administering the chloroform and assisting his student in the operation. I have witnessed the most disgraceful scenes enacted publicly by these self-glorifying gentlemen, and their ignorance stalks out in the most absurd propositions imaginable, so profusely prominent as to render them the hobgoblins of the profession, and comical illustrations of them as such,

quite frequent, amusing and proverbial. Then in all kindness, we would ask them to detach this odium from their names, and render the profession more respectable by being more respectable themselves. If they have a scientific communication to publish, don't incorporate it in the catalogue and circular of the watering-place near their town, and have it placarded on pasteboard fans advertising those springs, but forward it to one of our many medical journals, and if it is worthy of publication, it will appear decently. If not, it will be thrown into the waste-basket, and the world will be cheated out of a laugh at their expense. This advice is given free, but in great earnestness, and with the firm conviction that somebody will profit by it. It is not often that we give advice free when we can help it, but the above being such an imperative case, with no apparent chance for a better state of things, a little gratuitous advice became an absolute necessity, and if this is not plain enough, our next shall be unequivocal.

PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

Central Kentucky Medical Association.

Stated meeting held in Harrodsburg, Ky., July 17, 1878—the Vice President, Dr. Plummer, of Harrodsburg, in the Chair.

Present, twenty members, with Dr. J. P. Thomas, of Pembroke, Ky., and Prof. Stanford E. Chaillé, M. D., of New Orleans, as guests.

Dr. W. A. Brown, of Parksville, read the opening paper on "The Diagnosis, Pathology and Treatment of Cancer of the Uterus."

Introducing the subject with an account of the frequency and fatality of *cancer of the uterus*, and the period of life at which it most commonly assails its subjects, and the influence of child-bearing in producing it, etc., etc., he said of the several varieties of the disease he would speak only of two—

the medullary and epithelial—which were sufficient to embrace all the cancerous affections of the uterus. The former is most frequently met with, and appears first in a majority of instances in the lower portions of the uterus. The epithelial or cauliflower excrescence is confined mainly to the superficial or exposed tissues of the cervix uteri. Both forms often appear in the same patient. The diagnosis of cancer was given at length, and the difficulty of making a correct one in many cases alluded to. He described the appearance of the cancerous womb, and dwelt upon the great importance of ocular and tactile examination with the speculum, and the value of the microscope, in making a diagnosis. The natural course of the disease and the pathological changes incident to it were given, after which he discussed the heredity of the malady, giving the views of various authors. In the treatment of the disease he said little was to be hoped for. The patient should be at all times kept in the best possible health. In the first stage, before the neighboring organs and tissues were involved, life may be greatly prolonged, and possibly a cure effected in a small per cent. of cases. To surgery belongs in a great measure, the active treatment. The cases most favorable for the knife are those in which the parts at the junction of the uterus and vagina are unaffected, and the tumor alone constitutes the disease. The excision of the entire uterus for cancer was referred to, and the cases enumerated. Of the local remedies having the greatest favor he mentioned the injection of a solution of bromine in the affected parts, the application of a strong solution of chloride of zinc for the destruction of the disease, and the various styptics for controlling hemorrhage—perchloride of iron, tannin, ergot, etc., etc. He placed most reliance on arsenic internally, and for the relief of pain, in addition to the family of narcotics and hypnotics, he thought highly of ergot, explaining at the same time the supposed theory of its action. In conclusion he emphasized the importance of good food, hygiene, and the employment of all means that would keep the patient in the best physical condition; and he thought it best to keep from her knowledge the incurability of the disease as long as possible.

Dr. Dunlap, of Danville, said cancer was a constitutional disease, and he believed incurable. The most important point was to get at the diagnosis, which could only be reached with accuracy by the microscope. All other symptoms were fallible. The knife afforded only temporary relief, and he thought the tissues should be saved as far as possible. His main reliance in the treatment was to keep up the patient's health to the highest point. He was much interested in the paper, as it was practical and to the point.

Dr. C. H. Spilman, of Harrodsburg, remarked at length on the possibility of producing cancer in non-cancerous persons by improper meddling, and said he believed indurated tumors of the womb had been tortured into cancer by caustics, of which he gave several instances. He did not oppose the proper use of caustics, but they should be employed with discretion. He had nothing to add to the paper just read. It was full and explicit.

Dr. Carpenter, of Crab Orchard, alluded to the great value of the microscope in making a diagnosis, and said eminent authorities had asserted that fatty and other tumors, and even polypi, might be converted into cancer. After enumerating the various uterine diseases which may be mistaken for cancer, he said the disease was hereditary, and multipara and city women are most liable to it.

Dr. A. W. Johnstone, of Danville, regretted that he had not arrived in time to hear the opening discussion. The microscope would always decide the nature of a tumor. Recent investigations, he said, had established the fact that malignant growths do appear on the seats of slight irritations, as, for instance, chancres, psoriasis, etc., etc., and that in such numbers that it can not be denied that the first lesion had something to do with the production of the second. He reviewed the recent investigations and experiments with reference to cell formation in connection with cancer. The principal object in the treatment was to destroy the disease, and in his opinion the knife and caustics were the best means to accomplish this when they are applicable. The only prophylaxis was to keep the health at the highest possible standard.

Dr. McGee, of Mackville, believed that cancer can originate from benign tumors.

Dr. H. Brown, of Hustonville, approved of the use of caustics and the knife in the treatment of cancer. He spoke highly of the opening paper, and said in forming a diagnosis he trusted alone to the microscope. After some further remarks from Dr. Dunlap reaffirming his disbelief in the production of cancer in uncancerous persons, the debate closed.

Dr. A. W. Johnstone reported a case of ovariotomy with recovery. The patient aged 37 years, married, one child, with a history of an abortion, and of scrofula, first noticed the tumor some ten months before his first visit, which was made about the 15th of last March. He saw her in consultation with Drs. Brown of Hustonville, and Young of Liberty. She had in the meantime been subjected to several tappings by the attending physicians. A month later, with the assistance of Drs. Brown, Young, Warren, Boyle and others, he operated, removing a multilocular tumor, consisting of some two hundred cysts, each containing from a half ounce to a gallon of fluid. It was extensively adherent to the anterior and lateral walls at every point it touched. The estimated weight of the tumor was 40 pounds. The contents of the cysts presented every variety of substance, from a thin watery fluid to the densest colloid matter. The successive steps of the operation were detailed as well as the after treatment. The pedicle was fixed some three and a half inches from the pubis, as high up as it could be placed. Her recovery was unattended by any marked unfavorable symptoms, and at the expiration of two months she was able to return to her duties in excellent health. Following the report were some interesting remarks on the methods of operating in ovariotomy.

The Association adjourned for an hour, at which time it reassembled, with the President, Dr. McMurtry, of Danville, in the chair.

Dr. Johnstone moved that the Anatomy Demonstration set apart for this hour be continued to the next meeting, the appointee being absent, and that the hour be tendered to

Dr. Stanford E. Chaillé, who had been invited to address the Association. Passed

Dr. Chaillé, after expressing his thanks for the invitation extended him to address the Association, and the pleasure it gave him to be present at a meeting, delivered an extemporaneous address on State Medicine, of which the following is a brief summary. His earnest and forcible manner, and the thorough comprehension of the subject, in all its details, displayed by him, together with his exalted reputation as a scientist and teacher of medicine, served to center a very profound interest in his remarks. At the conclusion of his address an unanimous vote of thanks was accorded him. After some preliminary remarks, he said:

No department of knowledge is more important than State medicine, for none is destined to confer greater good on humanity. To accomplish this, thorough organization of the medical profession is indispensable; hence every man who appreciates the importance of State medicine must strenuously labor for medical association as the first step to an end of inestimable value.

Without associated action, the profession must remain comparatively powerless with legislatures and with the public; while a strong organization would wield an influence and power greater than the profession appreciates. To illustrate what might be accomplished by the organization of the 60,000 physicians of the United States, let us see what has been accomplished through the 20,000 physicians of Great Britain.

The British Medical Association, founded in 1832, has now some 7,500 members, who have exercised an influence great enough to place their country in a position enviable to every civilized nation. In 1858, it succeeded in having enacted the registration act, which has resulted in great improvement of medical education, and in protecting the public from medical impostors. By various public health acts(1848–55–58 66–72–75) a system of public hygiene has been established, which with its 15,000 sanitary districts, and the requisite number of sanitary officers, renders Great Britain pre-eminent in preventive medicine, and promises to be a potent means of

preserving the power and of promoting still further the prosperity of this great nation.

Through the British Medical Association the status and efficiency of the medical officers of the army, navy, and poor law medical service, have been greatly improved; for the special benefit of its members, the British Medical Journal—a first-class weekly—has been established; it has appropriated funds for original researches which have conferred honor on the profession and great good on humanity; it has established 29 branch associations throughout the three kingdoms, thus greatly promoting ethical control of the profession, and a high standard of professional conduct, as also friendly intercourse, scientific debate, and greater accuracy in clinical and other medical studies. It has favorably influenced legislation on many topics of public hygiene, and among these has, by the acts of 1853, '61, '67, '71, succeeded at last in establishing compulsory vaccination so greatly needed in this country, that its absence is a stain upon our vaunted superiority and civilization. Strenuous efforts are now being made to rectify the chief defect in these laws for compulsory vaccination by amendments, giving power to *re-vaccinate* at the age of puberty. In consequence of similarity of language, laws and institutions, the successive steps by which Great Britain has made its noted progress in State medicine, are especially worthy of our study, for through like progressive steps must we advance. In this connection the method of compulsory vaccination is of great interest, because of the great opposition to it in this country as in conflict with the "personal liberty of the subject;" for in Great Britain the prejudices as to this right are as strong as in this country. The British law successfully obviates this prejudice by imposing compulsory vaccination only on infants over three months old. May we not succeed by the same method?

With this brief statement of what has been accomplished by the British Medical Association, your attention should be directed to the important differences between this association and the medical organizations of this country. First—the comparatively small extent of Great Britain, the density of

population, the cheapness and quickness of travel render medical organization far easier than in this country. Second—the British Medical Association is required to exercise influence over only one supreme legislative body—Parliament—while in the United States, Congress is almost destitute of power in matters of State medicine, this power being lodged in the forty-eight legislatures of our States and Territories. Hence it is evident that our American medical association, compared with the British medical association, can never exercise more than an insignificant influence in State medicine, and that the greatest influence in this direction must be exercised by our State medical societies. The power and influence which these State medical societies should exercise is most inadequately appreciated. What is to be thought of a State medical society which wastes its time in listening to indifferent compends from text-books, or to trashy essays, etc., and has not a single report, or even a Standing Committee on State Medicine? Can such a society appreciate even remotely the most important object of its own existence? Is State medicine of sufficient importance to command the attention of every local as well as of every State medical society? What is State medicine? You will ransack books in vain to find a definition of this new department of knowledge. I venture upon this definition: *Every subject, for the comprehension of which, medical knowledge and for the execution of which, legislation are indispensable, appertains to State medicine.* It is conveniently divisible into four chief branches: Medical education, public institutions for the sick and the infirm, medical jurisprudence, and public hygiene. Further, it is worth consideration that, since the authority vested in different legislative bodies varies in extent, so the bounds of State medicine vary with that authority; thus the bounds of State medicine are, in reference to our Congress, limited (in accordance with the statement of my colleague, Prof. Richardson, late President of the American Medical Association), to laws regulating quarantine and the pollution of inter-State streams, while State medicine is unlimited as to our State Legislatures except by State Constitutions; so as to our

county and municipal governments, State medicine is limited to such bounds as may be determined by the constitution and laws of the State.

In further illustration of the significance and importance of State medicine, and of its interest to every medical man and medical society, attention is called to some of the chief topics which belong to each of the four great departments of State medicine.

MEDICAL EDUCATION.

In this branch France and Germany are pre-eminent. The defects in this country are so glaring that only the ignorant will dispute the need in most, if not all our States, for better laws. (1) To regulate the practice of medicine, midwifery, pharmacy and dentistry; (2) to establish and govern medical colleges; (3) to encourage and support medical libraries, museums, laboratories, zoological and botanical conservatories; (4) to promote original researches; (5) to so facilitate and regulate anatomical studies as to render such outrages as recently occurred in Cincinnatti and Ann Arbor impossible; for such outrages have always resulted from unjustly restrictive laws in reference to dissection.

PUBLIC INSTITUTIONS FOR THE SICK AND THE INFIRM.

Better laws are needed for the establishment and support of (1) hospitals, sanitaria, dispensaries; (2) schools, as well as asylums for idiots; (3) asylums for the insane, and (4) asylums for inebriates, such as New York in 1854 was the first government in the world to establish.

MEDICAL JURISPRUDENCE.

In this department Germany, in advance of the world, is probably more than a century in advance of the United States. To this branch of State medicine the following subjects belong: (1) medical witnesses—first as ordinary witnesses to medical facts; second, as expert witnesses to medical opinions. Our laws concerning Coroners cover the first subdivision, and are relics of gross barbarism. Massachusetts in 1877 enacted a law revolutionizing this ancient legal monstrosity, and placed that State at the head, on this topic, of all English-speaking governments. As to expert witnesses

to medical opinions, it is sufficient to prove our barbarity to state that most of the United States admit as a witness to opinions on topics of medical science any man who *calls* himself doctor! The laws of our different States are silent or conflicting, and the decisions of the courts at variance on the subject of the *remuneration* of medical witnesses. (2) Laws as to the insane are full of defects. Two examples of these may be now instanced. In most of our States a jury decides the question of insanity in criminal and in testamentary cases, and yet permit an innocent living person to be condemned to a penitentiary (called an insane asylum) on the written certificate of one or more such irresponsible doctors as the laws loosely recognize. Again, only Maine and New York have any thing like adequate laws for the trial of criminals alleged to be insane. In most of the States the laws are defective as to (3) inebriates, as well as to inebriate asylums; (4) poisons; (5) abortion; (6) viability of the new-born infant; (7) decision of a criminal's pregnancy by a jury of old women; (8) protection of *confidential communications* by a patient to his physician, in which the laws of New York and a few more States deserve the imitation of all other States; (9) malpractice. Two proposals have been made to improve our laws as to trials for malpractice; both are worthy of attention. One is that when a physician is sued for malpractice, he should be tried by a jury of his peers—i. e., by physicians; the other is that no person be permitted to institute such a suit until he has furnished bonds sufficient to remunerate the physician, if found innocent, for the damage inflicted by the scandalous trial.

The above are among the most important subjects of medical jurisprudence deserving your attention and organized efforts for reform. That our laws are grossly defective on these subjects, is rendered very evident by the fact that great variances exist between the laws of different States; and it is certain that these differences can not all be perfections.

PUBLIC HYGIENE, OR PREVENTIVE MEDICINE.

This branch of State medicine is the one most important to mankind. To illustrate this Dr. Bowditch, the highest

authority on the subject, states that the United States loses annually, by preventable diseases, at least 200,000 lives. My special studies on this subject entitle me to an opinion, which is that this is an under-estimate of our loss. In some of our cities not less than one-half the deaths are preventable. To reap the great benefits to society derivable from healthy and prolonged lives, not only are laws indispensable, but an enlightened public opinion so improved as to enforce their execution. The initiation of both must come from an organized medical profession. Our legal needs and defects are somewhat as follows: (1) Boards of Health—Some twenty States have established them, but, with a few exceptions, so defectively as to be ridiculously inoperative. (2) Registration of marriages, births, and deaths, furnishing the vital statistics indespensible for the guidance of Boards of Health. Some sixteen States have laws which are, with perhaps two or three exceptions, mere examples of legislative quackery. (3) Not a State has laws adequately providing for the purity of the air, water, bread, meat, and medicines daily used by the people. And yet the detriment to health and life inflicted by adulterations of these necessities of existence can not be exaggerated. (4) Not a State has laws regulating the proper construction of healthy dwellings for public, and much less for private use. (5) Not a State has laws providing for its topographical survey, its drainage, or its irrigation for sanitary purposes. (6) Many States have laws providing protection from some nuisances, from some unwholesome trades and traffics, but it is not believed that a single State has a system of well digested laws on this matter. (7) Some States have laws to protect life and property from explosive illuminating oils, but very few of these laws are worthy of imitation. Many States have quarantine and other laws for protection against (8) contagious, infectious, and epidemic diseases, but as to these, "Bowditch's Hygiene in America," (from which some of the preceding facts have been cited) states that while eleven States have laws of protection for the Texas disease of *cattle*, laws which proved adequate, yet that only twelve States have protective laws

against yellow fever, sixteen against cholera, and twenty-one against small-pox. None the less, it is doubtful if even one, of the few States which have legislated on these subjects, can present to the others the model of a full and wise law. There is not, probably, a single State which can furnish State medicine with a good law, which would serve other States as an example of what should be done against hydrophobia; and it is certain, that not a State has yet become sufficiently emancipated from medical prejudice to furnish protection to its living and its unborn future citizens from the widespread and fearful ravages of venereal diseases.

Sufficient examples have been given to illustrate the paramount importance to society of State medicine. To promote its progress the enlightenment of the profession itself is the first indispensable preliminary, and from the profession this knowledge must spread to the people and their legislators. As the chief means to accomplish the dissemination among the people of this knowledge, the profession should everywhere combine its influence to force into every private and public school a brief text-book on the Elements of Physiology and Sanitary Science, as has already been done by some few of the most enlightened public teachers.

If the facts presented have deserved the interested attention given, it is hoped that this society will give proof of this interest by forthwith establishing a Standing Committee on State Medicine, and in future devoting some part of its labor to this important subject. By such course it will give evidence that it is in active sympathy with the scientific spirit of our association, and is anxious to promote all medical knowledge which has so manifestly for its object the greatest good of mankind.

Dr. J. P. Thomas, of Pembroke, Ky., read by invitation an address on the Germ Theory in Surgery and Medicine.

The paper was quite lengthy, and was prepared with the author's usual care and ability. It showed much thought and familiarity with the subject, and was received with that interest and attention its merits deserved, and for which the thanks of the association were voted him.

He introduced his subject with some remarks upon the influence of the microscope upon the progress of medical and physical science, and alluded to the vagueness of many of our terms intended to indicate the nature of morbid processes, as, for example, the term *fever*, respecting the essential nature of which l ttle is known. This brought forward for consideration the important topic to which the address was devoted, and which is now the greatest pathological problem engaging the attention of the profession, viz: the Germ Theory in its Relation to the Practice of Medicine and Surgery. After explaining the germ theory as understood by its advocates, he spoke of the power of cold as a parasiticide, which raised the question whether cold, as applied to wounds, etc., was not entitled to the credit. He said investigation so far had failed to demonstrate that a single disease is produced by these organisms, except those long since demonstrated; and until some definite results are obtained he believed experienced empiricism in the treatment of disease is better and safer than any theory unsupported by facts. He went over Lister's system, with the conclusion that to be generally adopted it would have to be greatly simplified and modified. He laid down the underlying principles of conservative surgery and medicine, and spoke at length of the treatment of fractures and wounds. Of the latter he reviewed the two methods—open and closed—as practiced now. He alluded to Bauer's method, and the unusually light death-rate following its use. He advocated free drainage in wounds, and favored the open method, in support of which he adduced an array of facts from the investigations of Pasteur and others, giving in addition several interesting cases of surgery in illustration, of which photographs were exhibited. He also gave his experience in the treatment of diphtheria with ice, externally and internally, with the most gratifying results. He discussed the asserted germ origin of cholera, and asked if the disease was produced in this way, why the medication in its treatment was not in accordance?

In conclusion, he alluded to the vast field yet unexplored in reference to the causation of disease, and the part the

microscope was likely to play in revealing its hidden mysteries, and said until all these causes were laid bare, it was better to trust to our experience than to lay hold of theories unsupported by facts, however plausible they may be.

The Secretary presented copies of the "Bi-ennial Report of the Mountain Sanitarium for Pulmonary Diseases," at Asheville, North Carolina, under charge of Dr. W. Gleitsman, adding at the same time some remarks on the superior excellence of this resort for consumptives, and referring to Dr. Chaillé's published accounts of it.

Dr. A. D. Price was inclined to think very favorably of this institution, and as Dr. Chaillé had visited it, and brought its merits prominently before the profession, he said the Association would be favored if he would give his views in person.

Dr. Chaillé said he had visited the Sanitarium, and had recommended it highly in print, simply as a matter of scientific interest. He knew of no institution at home or abroad that at all equaled it, if the patient be sent there before the stage of softening. He alluded to the moderate charges, and said eminent physicians, as Prof. Loomis of New York, were already sending their patients to it. The President said he was very glad the matter had been brought before the Association, as the question of a suitable resort for our consumptives was of paramount importance. He asked Dr. Chaillé what season of the year was the best to send patients there. Dr. Chaillé said he had no knowledge on this point himself, but his observation and information led him to believe that it was most advisable to select the winter.

Dr. P. W. Logan, of Stanford, was appointed to open the debate at the next meeting, to be held at Stanford on the third Wednesday in October, on *The Proper Management of Natural Labor.* Adjourned.

GEO. T. ERWIN, M. D., Per. Sec'y.

OVARIOTOMY in a child eight years old was lately performed with success by Spencer Wells.—*Hospital Gazette.*

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

DEAR SIR:—Having seen the happiest effects recently from the use of dialysed iron, administered to two female patients suffering from chlorosis, both of whom objected to taking iron in any form, as it had always made them suffer more unpleasant effects than did the disease itself, and the rapid benefit following the administration of this comparatively new preparation of iron, led me to read up its chemistry and mode of preparation. In addition to the very favorable notice from Dr. S. Weir Mitchell, I was very much impressed with the article written by Dr. Yandell, of Louisville, and also by an analysis given in a late number of the Boston Medical and Surgical Journal, by Dr. Emory, of Boston. Messrs. John Wyeth & Bro., of this city, having specially called the attention of the medical profession to this preparation, I took the liberty of calling upon them, and asked if they would give me an account of their mode of preparation, and allow me to visit their laboratory and see the practical workings of their appliances for the manufacture of this iron. They at once expressed their willingness to give me every facility, and asked me to visit the part of the building devoted to the manufacture of this article. Their very intelligent manager of this department explained to me fully the different processes from the crude iron to the bottled preparation. Thinking it might be of interest to the readers of your valuable journal, I resolved to communicate with you upon the subject.

Instead of using a commercial iron, in the form of iron wire and filings, they use a chemically pure sulph. of iron. The entire freedom of the iron from any impurity is very essential. The pure sulphate of iron is precipitated in large vessels by means of ammonia. It is then carefully washed, drawn out and drained into a large steam jacketed kettle, and mixed with the proper proportion of sesqui-oxide of iron and heated to a temperature of 160°. This gives the proper

solution of per-oxide of iron ready for the process of endosmosis.

The water they use to aid in the dialysation is furnished by an artesian well dug for the purpose, and the water is pumped into large vats on the roof of their four-story building.

The water in these tanks is heated by steam through coils of pipe, which are so arranged that cold water may be added so as to regulate the exact temperature as may be thought necessary for the proper dialysation, this temperature being varied as the percentage of acid is lessened in the solution.

Each appliance covers a surface of four hundred square feet, enabling them to prepare about sixty gallons at one time with each one of their vessels. It requires from ten to thirty days to finish each separate acid solution placed upon the membrane. Every day during the process the solution is carefully assayed by the person in charge, so as to enable him to regulate the temperature of the water and prevent the membrane from being clogged by the iron solution. The assay is made by precipitating with aqua ammonia well washed. Heat is applied to expel the excess of ammonia in the solution. Nitrate of silver is added. The mixture is then allowed to stand, and afterward decanted, washed, dried and weighed. Washing, drying and weighing shows the percentage of iron in the solution.

The standard strength of their solution of iron is twenty-four grains to each fluid ounce of pure per-oxide of iron, each fluid ounce containing only sufficient chlorine to prevent decomposition. Occasionally, if the dialysation is carried too far, some portion of the solution will gelatinize from the dialyser, and occasionally, if exposed to the sun-light or air too long before being bottled, this solution of iron will become thick. If a small percentage of distilled water is immediately added, it will regain its limpidity at once, but if allowed to remain in this condition for some time it undergoes exactly the same change that takes place with the officinal hydrated sesqui-oxide of iron when kept under water for a considerable time. This solution, when properly prepared, should be almost tasteless, and yield no reaction of acid to litmus paper, or of the ordinary tests.

The usual dose is from five to twenty drops, given three or four times a day. Its freedom from taste renders it especially desirable for children. As experiment has shown that only a certain amount of iron will be absorbed into the system at one time, I can not recognize the advantage of giving it in larger doses, although some medical men claim that they get better benefit when it is administered in half teaspoonful doses. Dr. Weir Mitchell especially advocates the larger doses. Dr. DaCosta and a number of our leading physicians seem to prefer smaller doses, usually from ten to twenty drops as a full adult dose. The dose given to the patients to whom I make allusion above was fifteen drops three times a day.

Physicians will readily understand why this solution of iron, when properly prepared, can be depended upon as an antidote for poisoning by arsenic. Its chemistry is almost identical with that of the hydrated sesqui-oxide of iron.

I was also much interested and instructed by the explanation they gave me concerning their method of percolation and manufacture of fluid extracts and resinoids.

At some future time, if you think it would prove interesting and instructive to your readers, it would give me pleasure to give you a resume of their mode of exhausting the drugs.

The very general attention now being given to sulphate of cinchona, cinchonidia, quinidia and the other less costly alkaloids existing in Peruvian bark, on account of the terrible high cost of quinine, is a subject of great interest to the profession. At some future time I will visit the extensive works of Messrs. Rosengarten and those of Messrs. Powers & Weightman, and endeavor to learn some points in regard to this subject, in order that they may be laid before your readers.

M. S. F.

NOTE.—This interesting letter, upon a subject of disputed value, is furnished for careful study. It is published, of course, without the smallest consideration received, and solely because of its intrinsic value. It first appeared in the Cincinnati "Clinic."

ACCORDING to Prof. Trelat, the deaths in the Paris Hospitals, from phthisis in its various forms, count up the appalling number of 25 per cent. of the total deaths from disease.

CHEMISTRY AND PHARMACY.

"Diruit, ædificat, mutat."—Hor.

CONDUCTED BY C. W. NULL, M. D., LOUISVILLE, KY.

W. H. Klapp, M. D., (in Nerve and Mental Diseases) sets forth the following as his warranted conclusions, on the effects of strychnia on the animal economy. He gives an exhaustive array of most elaborate experiments which go far to clear up some of the hitherto obscure phenomena of its physiological action.

1. Strychnia produces no appreciable primary lesion of the nerve substance proper; that secondary lesions are produced —granular disintegration—by the engorgement of the vascular system, and that this is more marked in the brain and cord than in the nerves.

2. That the convulsions of strychnia are not cerebral, and that they are much more severe after ablation of the cerebrum, owing to the removal of Setschenow's ganglia.

3. Strychnia does not affect either the sensory or motor nerves at their periphery.

4. Both sensory and motor nerves are unaffected in their course by strychnia.

5. The tetanus-producing power of strychnia has its only action in the gray matter of the spinal cord.

6. In small doses the primary action is to excite the vaso-motor center, causing thus a rise in arterial pressure, and secondarily to paralyze this center, and hence to supplement this rise by a fall.

7. In large doses the vaso-motor center is immediately paralyzed.

8. The slowing of the pulse, produced by the exhibition of strychnia to both warm and cold blooded animals, is, in neither case, produced by any action on the central or peripheral ends of the pneumogastrics; but, in warm-blooded animals, is due to action on excito-motor ganglia of the heart, and in cold-blooded animals is due to action on the ganglia situated in the sinus venosus.

9. The main vaso-motor center of strychnia is situated in the medulla oblongata, but simpler centers exist in the spinal chord.

10. The pneumogastric nerves are not paralyzed by strychnia, in either warm or cold-blooded animals.

11. Strychnia decreases the number of respiratory movements; at first from too little blood, and afterwards from too much blood flowing to the respiratory centers.

12. The decrease is not due to any action on the pneumogastrics.

13. Artificial respiration always moderates, and sometimes stops spasms, and this power is due to a maintenance of the oxygenation of the blood until the poison can be eliminated, and is not due to a reflex stimulation of the pneumogastrics.

PROF. J. M. DACOSTA gives the following formula for administering salicylic acid in solution, as being the most elegant and pleasant combination he has been able to devise.

R. Sodii salicy lat, grs. xx;
Spiritus lavandulæ, M xv;
Glycerini, f ℥;
Aquæ, f ℥; M. Sig. dose ——

NITRITE OF AMYL AND CHLOROFORM AS AN ANÆSTHETIC—Prof. L. B. BALLICT, M. D. (in Med & Surg. Rep.) claims great immunity from the dangers of asphyxia in chloroformic anæsthesia, where the anæsthetic is combined and administered with nitrite of amyl, in proportion of fifteen drops to the ounce. His large experience, as well as theory, bears him out in this important discovery. It is now well known that death from chloroform is the result of its primary effects upon those great vital centers located in the medulla oblongata, the cardiac and the respiratory centers. The blood is shut off from these localities by a spasmodic vaso-motor action, hence paralysis of respiration or heart. Nitrite of amyl antagonizes this effect by relaxing the blood vessels and allowing a sufficient amount of the circulating fluid to enter; thus it becomes an antidote. When both are inhaled together it is easy to see how disagreeable fears and anticipations are cleared up and banished.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

Physics of the Infectious Diseases.—By C. A. Logan, A. M., M. D. Chicago, Jansen, McClurg & Co. 12mo. pp. 212.

This amusing notice as it appears in the Philadelphia "Medical Times," will remind the reader of both the wit and satire of Hood.

After a chapter of introductory remarks upon the atmosphere as a medium of disease-transmission, a classification of the diseases to be considered, and a discussion of the geography of disease, the author proceeds, in part II. of this little work, to consider the physical aspect of the coast of South America. In Part III. he treats of the medical aspect of the same locality; in Part IV., of the physics of specific causation; in part V., of the therapeutics of the infectious diseases; in Part VI., of the question of energy as related to general disorders. Under these somewhat vague and various heads Dr. Logan treats of—almost everything. Earthquakes, trade winds, ozone, the forces of nature, oxygen and electricity, the "volcanic" (*sic*) pile, vital force, the flora and fauna of the past, the contagious bioplast, the infectious molecule,—nothing seems too small or too great for our author's attention. Our wonder in looking over the index was how such a small volume could possibly contain an account of all these interesting topics; but they are all there. Dr. Logan gives a "little dab" at each theme as it passes, and the result is a farrago of disjointed thoughts on every conceivable subject to be found in the current scientific and medical literature of the day. Should Dr. Logan's work reach a second edition, we might be permitted to suggest the following quotation from a well-known "juvenile" by Lewis Carroll, which might serve as preface and index combined:

> "The time has come," the walrus said, "to talk of many things;
> Of ships, and shoes, and sealing-wax, of cabbages and kings,
> And why the sea is boiling hot, and whether pigs have wings."*

*From the "Walrus and the Carpenter" in Mother Goose.

Nervous Diseases—Their Description and Treatment. By Allan M'Lane Hamilton, M. D.

The following review was furnished by request of a friend. It appeared in "Brain," the leading neurological journal of England, and was written by J. Crichton-Brown, one of the ablest of English neurologists.

Dr. M'Lane Hamilton may be congratulated on having produced a concise and practical book on nervous diseases, and on having thus achieved the object which he prescribed to himself on commencing the laborious literary task, the fruits of which now lie before us in a large, well-arranged and well-printed volume. This is unquestionably the best and most complete text-book of nervous diseases that has yet appeared, and were international jealousy in scientific affairs at all possible, we might be excused for a feeling of chagrin that it should be of American parentage. A glance at its pages shows that the greater bulk of the material of which it is composed has been derived from English sources, and it might naturally have been anticipated that the digestion and compilation of that material would be accomplished in England. This work, however, has been performed in New York, and has been so well performed that no room is left for anything but commendation. With great skill Dr. Hamilton has presented to his readers a succinct and lucid survey of all that is known of the pathology of the nervous system, viewed in the light of the most recent researches. In so comprehensive an undertaking, involving such a number of mooted questions, it is of course inevitable that criticism should be challenged on many pages. Frequently we find ourselves differing from Dr. Hamilton's conclusions and recommendations; but to discuss the points of divergence would be to enter upon the details, and leave untouched the general scope of the volume. From the preliminary description of the methods of examination and study, and of the instruments of precision employed in the investigation of nervous diseases, up till the final collection of formulæ, the book is eminently practical. It brings together much scattered information in a methodical and well-balanced manner. We think, however, that it would en-

hance its usefulness if, in future editions, Dr. Hamilton would give more prominence than he has now done to the psychical symptoms of nervous diseases; if he would supply the specific indications for treatment, and fuller directions for the employment of his formulæ, in the manner of Tanner's "Practice of Medicine"; and if he would amend his pictorial illustrations, which as they now stand are the weakest part of his work, having neither artistic nor diagrammatic merit."

Practical Surgery—Including Surgical Dressing, Bandaging, Ligations and Amputations. By J. Ewing Mears, M.D., Demonstrator of Surgery in Jefferson Medical College, etc., with two hundred and twenty-seven illustrations. Philadelphia: Lindsay & Blakiston, 1878. Price $2.00.

As a hand-book this work is very excellent, and all surgeons will be pleased to have a copy of it.

The Physicians' Visiting List for 1879. From Lindsay & Blakiston.

This familiar visitor again makes its appearance, and for the twenty-ninth year. It is as usual excellent.

Cell Doctrine—By James Tyson, M. D., Philadelphia, Pa., Lindsay & Blakiston.

The first edition has been exhausted—a great compliment—the present edition shows great improvement. Every one who desires to study the cell doctrine, as it has been most approved by best authorities from its discovery to the present time, should read this interesting, concise and instructive little volume.

MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

Poisoning by the External Application of Carbolic Acid.—Prof. Kuster, at the last meeting of the Association of German Surgeons, entered the lists against the use of carbolic acid in antiseptic surgery. This assault has been supported by Langenback) Berliner klin. Wochen. No. 28, 1878)

and others. Children and delicate women are the chief sufferers from carbolic acid intoxication. The symptoms are, in the case of adults, nausea, vomiting, and headache; but in children the effects are more severe—the temperature falling below normal; the pulse being extremely weak and the body covered with a cold sweat—the phenomena of collapse.

It has been ascertained recently by Baumann that if animals, to whom carbolic acid had been previously administered, are treated by sodic sulphate, a harmless compound of phenol and sulphuric acid is formed. These results of experiments on animals have been confirmed by observations on man. Thus it has been found that the symptoms of carbolic acid poisoning are relieved by the administration of sodic sulphate. If this salt is given when the urine becomes dark-colored, it at once arrests the toxic phenomena, so that if desired the carbolic dressings can be renewed.

A Fair Inference.—A lady's maid visiting with her mistress at the residence of a celebrated surgeon, then deceased, noticed the classic invitation, "salve," upon the hall floor, and in the parlor a picture of Cleopatra applying the asp to her beautiful bosom. Whereupon, with that quick but not always correct woman's intuition about which we hear so much now-a-days, she confidently, but in all innocence inquired, "Dr. —— was a physician, was he not? I felt sure he was when I saw *salve* on the entry floor, and then that poor thing in the parlor, with her broken breast and a leech in her hand. I knew he must have been a doctor."

Iodoform.—Dr. Moleschott, of Turin, writes that he has used iodoform with success in cases which have been usually treated by iodine ointment, such as glandular swellings and cold abscesses. He mentions a case of enlarged spleen, with great prostration, pallor, obstinate diarrhœa, swelling of the lymphatic glands, and increase of the white blood-corpuscles (1 to 50 red), in which very favorable results followed the painting of iodoformed collodion over the spleen and lymphatic glands. Not less successful was its application in or-

chitis and epididymitis, and also in exudations into serous cavities, even including hydropericardium. He advises that iodoform collodion should be tried before paracentesis, whenever removal of watery effusion is necessary. He has cured five cases of acute hydrocephalus by the application of this remedy several times daily; calomel and purgatives being, however, given at the same time. In cases of swelling of the knee-joint, where surgical interference appeared unavoidable, perfect recovery followed the prolonged local application of the iodoform. Apart from its action as a resolvent, idoform has the property of relieving pain. Dr. Moleschott hence recommends its use in painful attacks of gout, and also in various forms of neuralgia. In a case of intercostal neuralgia, he gave it internally in the form of pills (three fourths of a grain daily) as well as externally. In severe neuritis, he has used iodoformed collodion successfully after other treatment had been tried in vain. Administered internally, it will probably be useful in the palpitations of nervous and hysterical patients, and will restore the regularity of the heart's impulse. Its offensive smell is obviated by mixture with tannin. —*Giornale Internazionale delle Scienze Mediche.—British Medical Journal.*

Clinical Thermometer.—Medical Times and Gaz.: Sir Humphrey Davy in his young days assisted Dr. Beddoes, who at that time was bent on curing all diseases by the inhalation of gases. It so happened that Davy was accustomed, before applying the inhaler, to ascertain the temperature by placing a thermometer under the tongue. While thus employed on a countryman, who fancied this was the wonderful process he had heard of, the man exclaimed that he already felt better. Davy took the hint, left the thermometer in its place some time, and reapplied it every morning. His patient improved in health, and ultimately got quite well without any other treatment.

Treatment of Wounds of the Superficial Palmar Arch by a Acupressure.—Mr. Bellamy believes that this simple

method of treatment for serious wounds of vessels is not practiced as frequently as it might be. He gives the case of a lad who divided the ulnar artery in the hand with a knife. He applied an Esmarch's bandage, but hemorrhage soon recurred. He then plugged the wound and bound the hand firmly to a dorsal splint, but without effect. He returned bleeding as profusely as before. Mr. Bellamy then determined to try acupressure, and taking a stout hair-lip pin, passed it through the tissues about half an inch from the edge of the cut, under the artery, and out again to a corresponding distance the other side of the wound, and placed the limb again upon the splint. This had the effect of entirely stopping the bleeding; the needle was taken away on the fourth day, and the entire wound had closed by the end of the week.—*The Lancet.*

Advantages of Legal Control over Prostitution.—The classical work of Parent Duchatelet, on Prostitution in Paris, contains this passage: "If legislation can not render men virtuous; if it can not correct the judgment and repress the impetuosity of passions which appeal to their senses too loudly to leave them the consciousness of duty; at least, it may meet the danger to which the imprudent expose themselves, and, for the sake of these men's wives and children, look after the health of the guilty, in order to preserve the innocent. I will go further, for I maintain that it ought to do so, and that those who have neglected this important duty have been unfaithful to their trust, and can only be excused by their ignorance of the benefits of the sanitary surveillance of prostitution."—*Med. and Sur. Rep.*

Edible Fungi.—The tendency to give increasing attention to the use of varieties of fungi beyond the well-known mushroom requires to be developed by a full perception of the delicate discrimination which is required in the selection of wholesome species. Only a week or two ago, two Swiss nurses, visiting Hampton Court, ate some fungi on the Sunday and died on the Monday. The Pharmaceutical Journal

points out that although there are many fungi which form excellent food, yet most of them have, so to speak, poisonous twin brothers, so like them that only the practiced eye can distinguish them. Thus the delicious *Lactarius deliciosus*, the taste of which has been likened to lamb chops, has a poisonous counterpart in the *Lactarius torminosus*, which is only distinguishable by the downy or hairy margin of the cap and the white milky juice. The pretty yellow chanterelle (*Cantharellus cilarius*), which possesses an odor of apricots, is parodied by the *Cantharellus aurantiacus*, differing only in its smaller size and in having the gills of darker color than the cap, and the *Boletus edulis* is mimicked by several other species of *Boletus*, in most of which, however, the flesh of the cap turns blue when broken. Respecting this plant, a correspondent, Mr. R. Goodwin Mumbray, of Richmond, writes that having found a fine specimen, about nine inches across and weighing eight ounces and a half, he consumed it for his evening meal, and that it smelt and tasted like a very fine mutton chop, while his cat, whose refined taste refuses aerated bread, although fond of ordinary bread, signified its belief in the wholesomeness of the fungus by eating a portion and asking for more. Perhaps the instinct of animals might furnish a guide as to the properties of fungi, for a celebrated authority on agarics states that, after having been all but poisoned by a fungus he had eaten, he offered a portion of it to a tame rabbit, which would eat mushrooms without hesitation, and the rabbit would not eat the fungus. The exhibitions of fungi which have been the fashion for the last few years have probably done some good in spreading a knowledge of these plants.

An Arabian Proverb.—The world is supported by four columns: The Justice of the Great; the Prayers of the Righteous; the Bravery of the Valiant, and the Science of the Physician.

Dr. voe Ivanchich has presented to the Medical Society of Buda-Pesth the sum of 5,000 florins (£500), as the foundation of a fund for the relief of indigent medicalparctioners.—*Brit. Med. Journal.*

MEDICAL NEWS.

'Nulla dies sine linea."

Dr. Skene, of New York, is satisfied from experiments already made that the microphone may be made useful in diagnosing pregnancy, and in the detection of uterine fibroids and other morbid growths.——The College of Physicians and Surgeons of Indiana, and the Indiana Medical College, have consolidated their forces under the name of "Medical College of Indiana." In unions like this there is strength.—*Mich. Med. News.*——*Prevention of Fœticide.*—At the last meeting of the California State Medical Society, it was resolved that the ministers of the gospel throughout the State be urgently requested to use all available and proper means to discourage the degrading and extensively prevalent crime of fœticide.—*Hospital Gazette.*——A woman died recently at Westward Ho, Devonshire, England, from the bite of a common fly.—*Med. and Surg. Rep.*——Vermont's fat woman, Mrs. Albert Smith, of Rochester, died recently, her weight being over four hundred pounds, and the coffin in which she was buried, at Saxton's River, was as wide as a common express wagon. ——*Cruelty to the Human Animal.*—Women sometimes show a degree of cruelty towards their children that they would not towards a pet dog. It most often arises from thoughtlessness, and possibly force of custom. A child was brought to Dr. J. C. Davis, at the Northeastern Dispensary last month, whose ulna had been fractured by its mother in lifting it across the gutter by the arm. This practice of lifting children by the arm is common amongst mothers and nurses, and is often productive of serious mischief, though rarely so severe as in this instance.—*Hospital Gaz.*——At the late meeting of the British Association, Dr. H. Muirhead made a communication on "Left-handedness." He thought it depended on which half of the brain took the lead. Left-handedness once begun in a family was likely to run in it. It was a curious fact that left-handed people had the left foot one-third to one-eighth of an inch longer than the right.—*Med. and*

Surg. Rep.——At the Hygiene Congress of Paris it was stated, during the discussion on the influence of tobacco on health, that Dr. Strohen, eighty-six years of age, the father of eleven children, and in the enjoyment of perfect health, has, for sixty-five years, smoked fifteen cigars daily.—*Gaz. Hebd.*——*Milk-Typhoid.*—A number of cases of typhoid fever have occurred in the Bridgend district of Perth. It has been ascertained by the sanitary inspector that all the families in which fever appeared had obtained their milk from one farm in the vicinity. The local authority resolved to have the water-supply of the farm analysed, and due precautions have been taken to prevent the spread of the disease.——A new decoration, called the Elizabeth Cross, has been established in Roumania by princely decree. It is to be given to persons who have aided the Roumanian sick and wounded during the recent campaign.—*Brit. Med. Jour.*——Some one recommended a Georgia farmer, whose hogs were troubled with fleas, to apply tar ointment as a remedy. Not having any lard with which to prepare the ointment, he tried the pure tar. For several days the hogs failed to come home and he concluded to look for them. He found them in a bed in the woods, all stuck together like a lot of damp postage stamps. ——*Suicide of a Surgeon.*—Parini of Pisa, a young surgeon of high reputation in Italy, while attending the annual Congress of the Italian Medical Association at Pisa, shot himself with a revolver on the 24th inst. The deceased man's father, it is stated, also committed suicide in an equally unaccountable way.—*Hospital Gazette.*——*A Stupid Joke.*—Last week, a man named Cuff was admitted into the North Infirmary, Cork, in consequence of injuries received from an explosion of gun powder, which substance had been substituted for tobacco in a pipe given him to smoke. It is stated that the man's face will be permanently disfigured.——A great Viennese tenor, over whom the Austrians are now in ecstasies, was formerly a prosaic barber with a disagreeable baritone voice. He was, moreover, an unhappy barber, and sought to give himself his quietus with a bare razor. He cut into his larynx, but didn't cut far enough, and after the wound healed

he found himself a famous singer. There is a hint here for ambitious young men.—*Mich. Med. News.*——*Phimosis as a Cause of Hernia.*—In the examination of fifty-one children affected with congenital phimosis (Hospital Gazette), Kempe discovered that thirty-one had hernia; five double inguinal; a few umbilical. None suffered at birth, and the tighter the preputial stenosis, the earlier the hernia. All were relieved by circumcision; in five, the latter operation relieved the hernia.——Dr. Prokop von Rokitansky (London Lancet), a son of the late celebrated Viennese pathologist, has been appointed Professor of Special Pathology and Therapeutics in the University of Innsbruck.——*Phymosis.*—Dr. Hue, of Rouen, operates by passing a needle through the dorsal surface close to the base of the gland, and tying the portion of the skin in front of the puncture with an elastic ligature, which cuts through in three or four days. The process is not painful, and the patients can, if necessary, continue their usual vocations.—*Le Progres Medical.*—*Med. Rec.*——*Opium Culture.*—The cultivation of opium (London Lancet) has been established in Eastern Africa. Fifty thousand acres of land at Mozambique have been sown with the best poppy-seed from Malwa by a Portuguese company. It is stated that the enterprise is succeeding well.——It appears that the clothes of those who die from cholera at Casabianca, Morocco (British Medical Journal), are sold at public auction in the market of that place, and hence we can not wonder that the disease increases and multiplies without let or hindrance.——The Emperor of Russia has forwarded to Dr. William Playfair a valuable diamond ring in recognition of his recent attendance on the Duchess of Edinburgh.——*Detection of the Principal Adulterations in Ground Coffee.*—According to C. Krauch (quoted in the Chemical News), coffee is distinguished by its high percentage of fatty matter (minimum 11 per cent. as against 1.15 per cent. of chicory), and by its low proportion of sugar (0.2 per cent. as against 22 per cent. in chicory).——*Medical Students in Germany.*—This winter shows (Med. and Surg. Reporter) an increased number of medical students at the German Universities. Vienna leads off with 658; Wurz-

burg comes next, with 475; then follow Munich, with 456; Dorpat, with 387; Berlin, with 346; Leipzig, with 335; Zurich, with 189; and the remainder of the twenty-six universities in which instruction is given in Germany with classes ranging from 40 to 150.——Sir Lawrence Palk, M. P., has offered the Torquay Board of Health a beautifully situated piece of land as a recreation-ground, for the nominal rent of half a crown per annum.

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

In order to have this issue reach the subscribers as soon as possible, it is not delayed for the usual editorials. The December journal is also in press and will soon appear.

The object has been to have the November and December issues printed almost simultaneously, and by the tenth or twelfth of December to have the subscribers receive all of the numbers due for the year.

It is true that there has been some delay during the editor's absence, but by the middle of December (an average early date of issue) the friends of this work will have received all of the numbers due.

Subscribers meanwhile will surely act as generously as they have always done, pardoning peculiar and unavoidable delays and giving this work their continued and valued support.

A large number of bills are due, and those in arrears are kindly asked to make their payments at once. Much money is needed for the work, and its friends will please remit promptly.

An addition has been made to the editorial staff in the person of Dr. David L. Gaillard, recently of South Carolina, and a near relative of the Editor. The issue of each journal will be hereafter more prompt, and Dr. David Gaillard's labors will be soon evident in the increased value of the work.

RICHMOND AND LOUISVILLE

MEDICAL JOURNAL.

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ORIGINAL COMMUNICATIONS.

"Qui docet discit."

ART. I.—*A Study of Shock.* By E. T. EASLEY, A. M., M. D., Little Rock, Ark.

[A POSTHUMOUS PAPER OF GREAT VALUE.]

NOTE.—Dr. Easley was one of the noble and distinguished band who at Memphis, Tenn., laid down their lives in the cause of humanity.—ED.

If it be true, as already stated, that a patient may sink rapidly from loss of blood when the wound is otherwise trivial, it is also true that fatal shock may supervene upon injuries unattended by hæmorrhage of any considerable amount. Such in particular are penetrating wounds of the abdominal parietes, in which the spleen, intestines, liver or kidneys, are implicated. The pain, syncope or collapse are all signs of great value and prominence in these injuries, and frequently serve an important part in differentiating them from non-penetrating wounds. When fæcal or urinary extravasation has occurred, the face is of ghastly pallor, the pain acutely lancinating and the prostration immediately very great. The buffer accidents, as they are called, in which the body is jammed or mashed between two heavy opposing surfaces, are the most frightful of all contusions. Without any laceration of the abdominal walls the viscera may be torn, and even putrefied. The collapse is complete, and those who are so unfortunate as to be the subjects of such accidents for the most part sink in a few hours without any decided reäction.

The remote effects of concussion and shock from railway

injuries often give rise to grave medico-legal questions. After apparent recovery people who have been subjected to such commotion not infrequently relapse into a condition of nervous terror, partial paralysis, or suffering, with symptoms more or less ill-defined and obscure. A man may have had no perceptible bruise or wound, and yet for an indefinite time he may undergo mental alarm, moral weakness, and be really ill. Of course a wide field for imposture is here opened. It is common to say of a person who has passed through such scenes, "he is not the man he was before the accident." Constitutional disturbance, as a delayed or latent result of shock, may not manifest itself for weeks or months after the infliction of the injury. Some change in the action of organs, or nervous system, or in the condition of the blood, seems to be induced which is incompatible with health; visceral, spinal or low febrile diseases frequently supervening. These facts were pointed out by Hodgkins and James sometime ago, and have been very thoroughly discussed by Mr. Erichsen.* For the latest and fullest information on the subject the reader is referred to the latter author.

It is rather remarkable, that in the major operations patients sink oftener from shock than from loss of blood. This has been almost a uniform experience. Urethral fever, shock, or septic trouble are more frequently fatal than hæmorrhage in operations on the genito-urinary organs, and toxæmia or shock claims more victims than hæmorrhage even in that most formidable procedure, amputation at the hip-joint. "The deaths," says Hennen, (op. cit. p. 216), "as far as my inquiries have gone, have been generally dependent on other causes than hæmorrhage. The great violence of the injury itself which requires the operation, and the severe shock, are quite sufficient to account for the fatal event." Death from shock has been the record made by Bently, Gilmore and those most familiar with this great operation during our civil war.† In fact, in much

* Erichsen on Railway Injuries, 1866. London Lancet, June, July, 1878.

† The views of these distinguished operators, the first my friend, the second my preceptor, may be found in Circular No. 7 S. G. O., and they are of great value.

less serious operations death sometimes occurs on the moment in men of the most determined courage, and without any excess of bleeding.

That very large class of injuries designated in general gunshot wounds, and which include all wounds made by explosions, are prolific sources of shock. The limits of the depression will here as elsewhere, so far as direct causes are concerned, depend upon the extent and character of the damage inflicted. The surgeon who has studied such symptoms carefully will not seldom find the constitutional dejection and confusion of great diagnostic significance. If he suspects, but can not be quite sure, that the missile has taken a fatal direction, and will prove inevitably mortal, he may know the fact almost certainly by the persistence of the general perturbation, alarm and sinking. If in spite of all efforts to recuperate his failing vitality the patient continues to give way; if his face remains pallid, anxious and pinched; if his pulse flutters, recedes, fails, returns feebly and fails again; and if nothing serves to improve his condition, it may be fairly judged that death is rapidly approaching. In such cases the shock remains or is magnified in intensity from the first production of the deadly impression until life is extinguished. "This emotion," writes Longmore, "is in great measure instinctive; it is witnessed in the horse hit mortally in action no less than in his rider, and seems to be sympathy of the whole frame with the part subjected to serious injury expressed through the nervous system."*

The effects of shock under some circumstances are not immediately apparent, and are always enhanced by fright or panic. A soldier swept onward in the charge, with his feelings tense and exalted by martial music or the ambition of fame, is almost oblivious to harm. When he feels himself wounded, however, or a rout begins, he is recalled to a sense of personal danger, and his depression may be as low as his excitement was previously high. Military surgeons have often remarked the difference with which men similarly wounded bear up under their injuries. Some severely shot walk off the field with little

* Holme's System, 2d edition, vol. ii, p. 137.

sign of distress, whilst others are quite overcome and must be supported or carried. These are differences of individual and personal character, of temperament, health and intelligence. Some writers make the distinction of true shock—ébraulement of French authors—in which the injury is unavoidably mortal, and shock the result of mental depression after unusual excitement, groundless alarm, or trivial wounds. Such a distinction does not seem to me justifiable. All shock is true shock, and its phenomena bear a close relationship as far as they go, whatever may be the causes. The difference appears to be one solely of degree of intensity.

Of all the accidents of civil life none are so common, none are attended by such agonizing and protracted pain as scalds and burns. The classification of burns into six divisions, as suggested by Dupuytren, is the one I believe usually adopted. As to pathology and treatment, the injury has been with great propriety divided into three periods, viz.: (1) A period of pain and congestion. (2) Of inflammation; and (3) of suppuration and exhaustion. Our consideration of the subject must be confined to the first of these; that is, the first two days after the injury. Of fatal burns vastly the majority die within this period, and shock is the almost universal cause of death. In extensive destruction to the true skin by burns with its sudden check to the circulation in the superficial vessels, no doubt grave changes are invariably produced in the internal circulation. Dupuytren also believed that death in the early stages of burns is often brought about by excessive pain. I imagine that in any case which lived longer than a few hours, it would be hard to attribute death solely to the pain. Still, however, pain, pure and simple, when it has reached a certain degree of intensity and duration, may be destructive. In burns where large areas of cuticle are destroyed, it seems to me that the acute violence to the peripheral nerves produces both the shock and pain, and that to these causes combined most mortality is to be assigned. The most conspicuous indications of a severe or fatal burn are extreme prostration, consternation, pallor, a peculiar terror. The unbearable heat which primarily exists is quickly succeeded by a threatening chilliness, the consequence

of suspended or retarded circulation. Rigors occur in their worst forms, and traumatic delirium often immediately follows the accident. The latter condition, indicating as it does great mental alarm, with physical shock and exhaustion, constitutes one of the most interesting and dread phenomena with which the surgeon is ever called upon to deal. I fear that many of us have not studied with sufficient care its intimate pathology, and I feel quite sure that we have underestimated the importance of its prophylactic treatment.

The extent of shock likely to be inflicted in any surgical procedure is to be estimated, approximately at least by several circumstances: (1) The magnitude of the operation, and if for wounds or injury, the amount and nature of damage to which the body has been already subjected. (2) The locality of the operation; and (3) the age, idiosyncrasies, diseases and habits of mind and body of the subject. It is needless to say that various extraneous agencies may have much to do with the degree of dejection and alarm likely to ensue after an operation. It needs no elaboration to show that he who is cheerful and hopeful in submitting to the knife has vastly the advantage of him who is in an opposite or desponding frame of mind. I have had one death at least on the table when the operation had been completed with small loss of blood, and with all the chances apparently in favor of the patient. The unfortunate result I can only assign to his total want of moral courage, and to the fact that he had come to regard death as a foregone and inevitable conclusion. The wounds of lunatics, we are told, heal quickly and well. This I believe is due for the most part to the fact that they suffer no mental anxiety, the moral element of the case is eliminated; yet that the physical system suffers equally with the reason and intelligence in shock is proven by the common observation that animals are so depressed. Mr. Darwin has shown that various emotions, as well as pain, produce changes of attitude, action and temperature in many of the lower animals.* The emotion displayed by the charger when wounded has been already alluded to in this paper, and Job's celebrated description of his enthusiasm in approaching

* Op. cit. p. 130 et seq.

battle is universally admitted to be just and faithful. Guersant has called attention to the fact of which many persons seem ignorant, that operations are more difficult in children than at a more advanced age.* To this statement must be added that all operations on infants should be done as rapidly as practicable, for they do not bear pain as long and well as adults, and hæmorrhage is far more dangerous. I have myself frequently observed after operations on children that the extent of the shock was not clearly indicated except by the reäctionary fever. In cases where I imagined the constitutional disturbance would be of little or no moment on the next day, the pulse has become very rapid, the face flushed, with restlessness and great thirst. Children at a very early age exhibit susceptibility to those influences which act through the mind and moral feelings; and much sooner than might be supposed they distinguish actual interest in their welfare from habitual pretence, the real encouragement of a few words kindly and firmly spoken from the stereotyped cant with which they are too often addressed.

The older surgeons entertained a dread, almost despair of wounds of the peritoneum. Travers,† and John Bell‡ in particular, have dwelt at considerable length on the alarming nature of the shock, and the nearly absolute certainty of dangerous or mortal inflammation. The latter, while declaiming in his lively way against what he calls the absurdity of supposing air to exert any harmful effect when admitted to wounded cavities, declares the fatality of the Cæsarean operation depends upon the peritoneal inflammation sure to follow. We have not advanced beyond the knowledge of the masters in relation to the shock certain to ensue, but we have come to understand that their extreme dread of wounding the peritoneum, so far as inflammation is concerned, was not well grounded. We now know, and daily experience teaches us more perfectly, that septicæmia and exhaustion claim most victims in the abdominal section, and that inflammation is the most controllable of its real dangers.

* Surgical Disease of Children, p. 20.

† Injuries of the Intestines, p. 10.

‡ Discourses on the nature and cure of wounds, edition 3. p. 310.

All major operations, and often those which fall far short of a claim to that designation, may be laid down as immediate causes of shock. The surgeon who underestimates its importance as an element of disease after operations, commits a grave mistake. Not only does it tend to impair the secretions and reparative products, but it is itself the direct cause of sudden death. While secondary amputations oftenest carry off the patient through the supervention of morbid conditions of an asthenic type, those which are primary are most frequently fatal from shock or hæmorrhage. Serious questions often arise as to the practicability of operations apparently necessary or imperative. Among these are to be considered the probable extent of the shock and the ability of the patient to reäct under the sudden demand made upon his vitality. The physical character of the wound and the nature of the implement making it also exercise a marked influence. It is obvious that a torn, irregular or comminuted wound will give origin to a much greater degree of pain than one which is evenly cut. Rough, rusty nails, fragments of glass, or splinters of wood, when they penetrate the tissues, are apt to occasion acute suffering and irritation. I have seen a child whose hand had been transfixed by a bearded fish-hook pass into convulsions.

SYMPTOMS AND VARIETIES.

Shock, whether physical or moral, or both combined, as is sometimes unavoidably the case, may be of every grade of intensity, from the slightest and most transitory impression on the vital functions to their utter and rapid extinction. From its milder forms the system recovers after a variable period, but reäction in its severer states is a much slower and more difficult process; or the sinking may end suddenly, or with various rates of celerity in a fatal issue. It may amount to no more than a moderate mental alarm, with perhaps, some tremor, slight nausea, and a sensation of feebleness; and again it may be followed by sudden death, as when paralysis or hopeless lesion affects the heart; or by a comatose sinking, for which there can be no relief when the cause disturbs the intimate organization and circulation of the brain. In the one case by

cheerful encouragement, perhaps a little stimulation, the patient is restored, and the heart, the lungs, the brain, resume their wonted functions; in the other, on the contrary, the sufferer goes on failing; has sensations of extreme sinking; there is coldness, sticky sweat, irregular sighing or gasping respiration; there may be delirium, apathy or stupor, singultus, sickness and emesis; the vision grows dim; the pulse quivers, grows weaker and weaker, and disappears from the wrist; death is at hand and the heart fails. These signs may be individually absent or more or less prominent; they vary as do the characters of persons. Some people are so constituted that they suffer acutely without giving any external manifestation of what they endure; others parade their griefs and pains on the smallest provocation. Fortunately those who are most profuse in their lamentations are not generally those who suffer most. The shock of that grief is perilous which is so overpowering as to strike dumb and to affect the secretions, for even tears fail. The admonition of Malcolm to Macduff, when the latter is thrown into consternation on hearing of the death of his wife and children, is explicit.

> "Give sorrow words; the grief that does not speak,
> Whispers the o'erfraught heart and bids it break."

Vomiting is a symptom of great prostration, and also frequently a sign of reäction. To fix its diagnostic value, therefore, it must be considered in connection with the other indications. Last year I attended a railway accident, in which double amputation was necessary. The patient, when first seen, was vomiting; a little brandy and morphine were given, and it was thought best to operate on the spot. The left arm at the shoulder-joint and the left leg at the knee were quickly removed. The patient vomited again, and continued for some time in a state of partial reäction. The emesis in the first instance no doubt indicated an extreme degree of shock and exhaustion in the latter that the vital powers were at least making an effort to rally. The diagnosis of shock requires little remark; it is not likely to be mistaken, and is generally, if not always, instantly manifested on the cause producing it. It has been already remarked that we object to the distinction of true

or physical shock from any other form of the trouble. All shock, except perhaps the obscurer or masked forms, is attended by the same general signs. The sensation of sinking about the epigastrium or præcordia, the pallor, failing pulse, and more or less decided and universal failure of all the vital functions are common characteristics. It is the heart, doubtless, which is most obviously affected, and so in fatal cases, although by the ear we may detect the feeble, fluttering action of that organ, the pulse does not reach the wrist. Whilst this is true, there can be no question that by sympathy communicated through the nerve centres the influence is felt throughout the system. The eye loses its normal lustre, is dull, the face shrunken, the respiration short, weak, or gasping. There may be total insensibility while life yet remains, and the patient may be drowsy and only semi-conscious when aroused, with dimness of vision and vertigo. These are the symptoms of a hazardous collapse, and if taken in connection with an injury to the frame sufficient alone to produce them, are infallibly the precursors of death.

McLeod says that "the commotion, *i. e.*, shock of gunshot wounds, is greater when the lower extremities are injured than when the arms suffer, and this is more especially seen if the person be in an erect position when the injury is inflicted." It is affirmed, too, that the shock is greater when the ball strikes a muscle in action than when it impinges upon one which is relaxed.

Some authors have classified the different modifications or varieties of shock with needless prolixity. Such an arrangement can only be for the most part arbitrary, and answers no good purpose, but tends rather to confusion. Copland, for example, mentions no less than five forms,* and yet these resemble each other so nearly that the distinction can hardly be said to make a difference. Sometimes the depression does not immediately supervene on the injury, but comes on even to a fatal extent at a later period. This has not inaptly been called "delayed" or secondary shock. It may be illustrated in this way. A man suffers an injury necessarily fatal in which his extremi-

* Med. Dictionary. Art. Shock.

ties are crushed, torn, or comminuted, yet he does not sink into complete syncope, the pulse holds up. He makes known his wants, leaves messages for his friends, and then, after an hour or more, the shock appears to culminate at once, and he goes down very fast. Temperament, education, and constitutional habit have certainly a great deal to do with this. There are men so firm that they seem able to hold death in abeyance for a little while even when his approach is inevitable. It is to be remembered also, and especially as having reference to its sequences, that there is great variation in the rapidity and force with which shock is distributed to the system. The circulatory or respiratory organs will be most disturbed in one case; the cerebral or cerebro-spinal in another, and the urinary or digestive in a third. We may, in fact, have the other signs of genuine shock in a mild way when none of these are deranged perceptibly; for it may be attended only by paleness, chilliness, languor, tremor, or fright, with the respiration a little hurried. In our view of the subject, every distress, mental or physical, is accompanied by corresponding shock; for as we can not understand a body without sentient nerves, so it is impossible to conceive a nature so callous as to be indifferent to those calamities and griefs which affect the moral feelings.

Rupture of the heart consequent on tremendous mental agony, of which many authentic cases are recorded, is, of course, followed by mortal shock, and a peculiar sharp or wailing cry is generally mentioned as its accompaniment. It is also said if the heart or some great vessel near it be torn, that the subject turns suddenly pale, makes a few convulsive movements, perhaps steps off quickly with rapid or incoherent exclamations before sinking down dead. Bloody sweat as an evidence of extreme depression, from fear or mortal consternation, has been frequently observed. It characterized the unspeakable suffering of Christ in the garden, for there is no good reason to doubt that Luke's description is a precise account of what actually happened on that melancholy occasion. We have the testimony of both Voltaire and the physicians of the King that Charles IX, of France, a man of execrable cruelty and violent passions, was found at one time bathed in bloody sweat.* Phillip V, of

* De Mezeray. History of France, vol. iii, p. 306.

Spain, died suddenly on being told that the Spaniards had been defeated; and on opening him his heart was found ruptured.* These are among the most conspicuous of many instances that could be given in which the trouble has assumed a character so truly appalling. It may be regarded as proved that the exciting passions, when violent or accompanied with agony or conflict of mind, are competent to induce bloody sweat, and when still intenser, even rupture of the heart. Among the causes of spontaneous rupture of the heart (of which as many as sixty-five cases had been collected up to 1855†), Dr. Copland enumerates "violent mental emotions, especially anger, fright, terror, unexpected disappointment, anxiety, and distressing intelligence abruptly communicated."

In no part of the body is a shock to the feelings so sensitively felt as in the præcordia and region of the diaphragm. It is in these that the pleasure or pain is experienced. Mankind have common forms of expression when under the influence of one or other of these emotions. Our heart, we are accustomed to say, is relieved; it is light; it is heavy; it jumps for joy; it is oppressed; it is full; it is in tears; it is ready to break. Such phrases have a highly significant and literal value; they mean more than mere states of mind; they express in the most eloquent and graphic way the symptoms or effects of mental states. When the heart is thrown into palpitation or vehement action, it does indeed "jump for joy," and when on occasion of sudden and overpowering sorrow, the whole surface becomes pale, cold, and shrunken. When the organ becomes so disabled as to be incapable of sending the life current out to the capillaries, and the column of blood recoils on it, it is, in fact, painfully "oppressed."

When a man is struck on the epigastric region, he catches his breath, as it is called, turns pale, presses his hands on the part, and with the low groan of extreme pain bends the body forward. If the disturbance be very much greater, as in the celebrated cases specifically mentioned by Cooper and Hunter, he

* Zimmerman on Experience in Physic, vol. ii, p. 268.

† Copland, op. cit., Art. Heart. Dr. Hollowell, Amer. Jour. Med. Sciences, vol. xviii, p. 74.

falls down instantly dead. Now, we say that these several results are brought about by impression on the great nerve centre, the solar plexus communicated to the vital organs. For ordinary purposes such an explanation is definite enough; but of the ultimate nature of what really takes place, we know very little; of the histological changes, if any happen in the nerves themselves, absolutely nothing. So in like manner are we ignorant as to the media through which a shock so overwhelming is conveyed. We do not know whether the impulse be by heat, pressure, vibration, or electricity. We only know the fact. Professor Gross, everywhere in treating of pain, shock, and irritation, assumes the existence of a nervous fluid,* the very point in dispute since the labors of Sir Charles Bell placed our knowledge of the anatomy and physiology of this system on an ascertained basis. The illustrious Englishman, in fact, asserted with his usual emphasis: "To disregard the anatomy of the nervous system, or to take it in the gross; to make a new science of life, and influenced by a false analogy, to call it a fluid; to attempt to direct it along a cord or wire is to transgress all the rules of physiological inquiry."† A further discussion of this point, however interesting, is not justified by either the scope or purpose of the present paper.

There is another kind of shock of peculiar and interesting character which sometimes supervenes on severe injuries. It was alluded to under different names by some of the older writers, and has been to some extent described by recent ones. McClellan has written by far the most faithful and accurate account of this variety of shock which I have seen.‡

"Nature," John Hunter was used to saying, "requires to feel the effects of an injury"; but in these cases apparently she does not. The patient may be agitated or anxious at first, but very soon complains of nothing. He suffers little pain or discomfort, and all the principal functions are performed with normal reg-

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* System of Surgery, Shock, Irritation. Trans. Amer. Med. Asso., 1877, p. 573.

† Nerves of the Human Body, 1825, p. 164.

‡ Principles and Practice of Surgery, 1848, p. 17.

ularity. The tongue is clean, the respiration and circulation natural; a joint perhaps has been torn up or a great compound fracture encountered, and yet no proportionate derangement is manifested. In fact, the case looks altogether too well for one of such magnitude. To an uneducated or careless observer everything appears to go on well; but suddenly there is a change, delirium or convulsions, or rapid failure and embarrassment of all the functions come on, and the patient sinks out before the occurrence of suppuration or even of decided inflammation. "These," says McClellan, "may well be denominated cases of *insidious* shock. The symptoms are deceitful enough; perhaps from the very suddenness and intensity of invasion, the springs of nervous energy are cut off, the foundations of life are undermined, and no further elaboration of the great principle of innervation can be effected. The actions of the system are allowed to go on with apparent tranquility until they wear down or exhaust all the power that has been stored up, and the forces sink into annihilation. The countenance of the patient is altogether unnatural. It presents an anxious, inquiring look about the forehead, eyes, and upper portions of the face, while all about the mouth and lips is smiling and composed. When you first approach the bedside the patient will look up at you with a stare of alarm and suspicion, and he will repeat this expression constantly as often as you approach him to make any inquiry. No matter how long you remain in the room, whenever you attract his attention his forehead will be drawn up and his brows contracted into a scowl of suspicion, mingled with anxiety."* All authorities who mention it are agreed that this is one of the most perilous varieties of shock, and our author, just quoted, estimates it as probable that not more than one in a hundred can possibly recover. The prognosis, therefore, is always grave; for although such cases may live and deceive an unpracticed judgment for several days, when they do fail they go down all at once. In this view of them we are apt to be reminded of cases which occur in yellow fever or other malignant epidemics; men will then be seen on the streets, perhaps transacting their ordinary business, until the very instant when they drop down

* Op. cit., p. 19.

and die.* In the epidemic of spotted fever in New England, it is said mechanics and farmers fell down at their work. In one of the early yellow fever visitations, Dr. Rush was fond of telling how he met a friend on the street with death depicted on his countenance, and had only time to take him home and see him expire.

We have now tried to indicate the leading symptoms that are to be accepted as characteristic of shock. We may also claim to have shown the following varieties, namely, transitory, protracted, secondary or delayed, and insidious shock, constituting the basis of a more intelligent classification than has perhaps hitherto been attempted.

MODES OF DEATH AND MORBID ANATOMY.

Bichât, in his celebrated "Récherches sur la vie et la mort," laid down that death always begins either in the heart, the head, or the lungs, and this nomenclature, though possibly somewhat unsatisfactory, is sufficiently comprehensive for our present purpose. It may then, as to the present inquiry, be assumed that death for the most part begins in the heart. There are two principal ways by which the result may be brought on, by anæmia and by asthenia; only one of these, the latter, is described by Savory. The heart becomes therefore the organ chiefly concerned in a study of the pathology of sudden death, and even in many of those cases in which the fatal issue is deferred and life ends in coma, it will be found that the primary and essentially fatal lesion is inflicted on the central organ of the circulation. Let us see what it is that actually happens in these cases. When the system is quickly drained by a tremendous hæmorrhage, the patient dies from the syncope of anæmia. This death is caused directly by want of due supply of blood, its accustomed stimulus, to the heart. The circulation fails, not because the organ fails to contract, but because the blood does not reach it in sufficient quantities; that this is what really occurs is shown in autopsies when the heart is found

* The author, who is now (September, 1878,) engaged in treating this fever in the wards of the City Hospital at Memphis, has had frequent opportunities of observing the suddenness of its invasion and the consequent shock, confusion of mind, and rapid delirium.

empty or nearly so and contracted; and also by the results of transfusion, in which, if the heart be still able to act on the new supply of blood, the vital functions are resumed with the most gratifying activity. Now, when a man perishes from asthenia, in shock indubitably the most frequent cause of death, all this is exactly reversed. Here we have no lack of proper stimulus to the heart, but a total failure of its contractile power. As in the other case, so in this the proof is furnished by post-mortem examination. Each cavity of the heart is found to be more or less full of blood upon which it has been unable to contract, and never empty. Even a partial paralysis of the movements of the heart gives origin to the most unmistakable signs of shock, and these, when sufficiently exaggerated, indicate great danger of immediate dissolution. It is now the nervous system that is principally affected, and through it consecutively the heart. Cases of concussion and of blows on the epigastrium are fatal in this way; so are those other prolific causes of shock which we know act in the first place on the nervous system, as intense joy, grief, and terror. Life is destroyed in the same way by lightning and electricity. A sudden arrest or suspension of the contractile powers of the heart is in fact due to a multitude of causes, some of them appreciable, and others little understood. When the heart and the great vessels near it are distended, and the organ fails to send the blood out to the capillaries, the symptoms are best described in the simple language which people employ. My heart is oppressed, they say; it is burdened; and so indeed it is. It is not surprising also that under the operation of depressing influences long continued, as sorrow or anxiety, that the organ should undergo grave organic changes—changes of attenuation, thinning, softening, or dilatation without corresponding hypertrophy.

It is related that a poor girl who had endured uncommon misfortunes and grief for one so young, was brought to the Hôtel Dieu complaining only of a ceaseless pain and uneasiness in the præcordia. In a little while she was sent away, but soon returned suffering from the same constant distress. She was again discharged, and again came back, till finally one morning she was found dead. The heart, very thin and soft, had given

way, and the pericardium was almost full of blood. The unhappy young woman had literally died of a broken heart. Life may be terminated by causes so subtle that we not only fail to perceive the mode of dying, but can not discover any chemical or physical change in any organ or structure. We can not be more exact than to formulate the conclusion that death from shock is the result of an impression on some part of the nervous system acting through a nerve centre upon the heart and destroying its action. In death from rupture of the heart the shock is simply overwhelming, and is described by all who have witnessed it as perfectly startling in its signs of mortal extremity. The organ does not, it is said, instantly cease to beat, but death is more the result of pressure from the blood rapidly effused in the pericardium than of sudden paralysis. So in death from the entrance of air into the heart, the organ is not at once arrested in its pulsations, although the excitement and alarm may run very high. On the contrary, the heart is thrown into a state of the most tumultuous action, the frothy, spumous blood is churned around in its chamber; a wailing, whining cry comes forth, and all is over. Dupuytren's girl exclaimed: "*Je suis morte,*" trembled, and fell dead. In most cases where death occurs from shock without traumatism, the changes are so small as to justify the observation that there is no morbid anotomy. This is only equivalent to saying that the pathological alteration eludes our investigation; for, of course, a change of normal structure or relation incompatible with life has taken place. The gross appearances, those which are readily demonstrated, are thus recounted by Savory. "The heart is found full of blood, all its cavities are distended; although this is most obvious in the auricles and right ventricle, the left ventricle not so readily yielding. The great veins and the venous system are also engorged ; the blood, as a general rule, coägulates very imperfectly; a considerable portion of it remains fluid, and the clots are loose and dark. In none of my observations or experiments have I found it altogether fluid, although there is no reason to doubt the statement of Hunter and others that this is sometimes the case. Rigor mortis also commonly, perhaps always, occurs, and it is sometimes at least very strongly

marked." A person struck by lightning is at once more or less completely unconscious. This insensibility may be mostly the effect of fright, and it is then only transient. In severe cases there is partial or total abolition of sensation and motion; in the severest of all, those which are immediately fatal, death is caused by overpowering shock to the brain and nervous system.

In rupture of the heart the post-mortem signs are more pronounced than in either of the modes of death already mentioned. The viscus itself is torn, and the rent, of variable extent, is not difficult to discover, and is oftenest found in the left ventricle. Blood is quickly poured out into the pericardial sac. It here separates into its two rude constituents—the crassamentum or clot—composed of the colored corpuscles enmeshed in the fibrin, and the serum, consisting of water, albumen, and salts. This is what happens, perhaps more rapidly, when blood is drawn from a vein. The direct cause of the catastrophe is the sudden and violent contraction of one of the ventricles, usually the left, on the column of blood thrown into it by a similar contraction of the corresponding auricle. Prevented from returning backward by the intervening valve, and finding no adequate outlet in the artery, the blood reäcts on the ventricle, which is accordingly torn at the point of greatest distension, or least resistance by the agency of its own recoiling force. Dr. Stroud, in his remarkable book, has proven beyond any reasonable doubt that Christ died so.* Viewed from a medical standpoint, this was as clearly a case of rupture of the heart as could be established in the absence of an autopsy. St. John, a man of humble origin, without medical or other learning, the tenderest feelings of whose nature were enlisted, and who was a deeply-interested spectator of the melancholy events transpiring, distinctly declares: "One of the soldiers with a spear pierced his side, and forthwith came there out blood and water."†

There is every reason to believe that there was nothing

* Physical Cause of the Death of Christ, New York, 1871. The chapter in this work on the immediate cause of the death of Christ is one of the finest examples of close and conclusive inductive reasoning with which I am acquainted.

† St. John, xix: 34. I John, v: 6–8.

miraculous in this, as some have erroneously supposed, and that the Apostle states in the simplest and most truthful way exactly what he saw. It is impossible that a flow of blood and water could have proceeded from any other source than a rupture of the heart and subsequent separation of the blood into crassamentum and serum.

SEQUELÆ.

Our discussion under this head will be facilitated if we first observe what ordinarilly takes place in cases of shock. Let us suppose then that we find our patient with eyes lustreless, face shrunken and pallid, pulse quick and weak, intermitting and at times wanting, skin clammy, respiration irregular, with mental faculties obscured. This group of symptoms indicates profound depression, and is always grave enough to challenge our solicitude; yet in by far the larger number of cases they sooner or later give place to favorable reäction. The vital powers come up, reässert themselves; the pulse and heart beat synchronously or nearly so, normally; the respiration becomes again even and full, all embarrassed functions are resumed, and the countenance, but a little while ago so ghastly, takes on the ruddy glow and composed look of health. There is no longer aberration of mind, incoherence or restlessness, and it is easy to see that vigor and tranquility have returned. We say this is what usually happens. But in this succession of events the man has passed through two conspicuous perils; an utter failure to reäct on the one hand, and on the other, the danger which environs that process when it transcends the limits of safety. The prognosis will be favorable or otherwise in proportion to the extent of the commotion and its exciting cause, and according as the collapse is more or less complete. Should reäction be too violent as a consequence of the idiosyncrasy of the individual, of injudicious treatment, or the nature of the immediate cause, well marked and alarming febrile disturbance and vascular excitement is sure to succeed. The most perilous sequence of protracted shock is undoubtedly that first described, and admirably described, by Travers as '*prostration with excitement*'—a condition nearly akin to if not identical with traumatic delirium, and one which may end in a typhoid state,

coma and death. It was originally characterized by John Hunter as action without the power to sustain itself, the vessels in his view making stronger efforts than they had strength to endure. Later authors have designated the condition "irritative or asthenic excitement," in contradistinction to traumatic or simple inflammatory fever. Both imperfect and excessive reäction indicate want of power; they are equally evidences of debility. The wavering balance may hesitate as to which shall prevail, and in fact they not infrequently pass into each other. When a man, after suffering some great commotion, is continually harassed, denied sleep and deprived of even customary stimulation, he will as surely enter upon exaggerated reäction as though he had been stimulated overmuch. These adynamic symptoms are of exceedingly grave import; they may pass into real coma, or into the pseudo-somnolence of coma-vigil, and in either case there is such utter prostration and derangement of function that death is almost sure to occur. Again, a dangerous form of traumatic delirium may be quickly developed. The face is flushed, the pulse weak, rapid and irritable; the patient is wide awake, sleepless; his mind wanders; he grows silly or irrelevant. He makes no complaint, and seems oblivious to pain; an amputated stump, a ragged wound, or compound fracture will be tossed about in the most reckless way; there is frequently absolute intolerence of any restraint, bandages and dressings are torn away, and the sufferer handles injured parts with pitiful indifference to consequences. The countenance has a startled, anxious or suspicious look, and sometimes one of unnatural elation. The patient may reject all food or eat voraciously without choice whatever is given him. The expressions which characterize this dementia are at times very touching. He "babbles of green fields," of familiar scenes, of persons and things long passed away. I have seen no account of what I am trying to describe so admirable as that in Dr. Brown's most pathetic story, where poor Alie presses to her withered breast and fondles in imagination the "bairn in the kingdom forty years and mair." "It was pitiful and strange to see her wasted, dying look, keen and yet vague; her immense love."*

* Rab and his Friends.

When a man has gone into this condition we say that he is dying or that he will die. But why? Have the brain and nerve-centres been so disturbed in some mysterious way that he can no longer live? or has functional power in the vital organs become exhausted to an extent incompatible with the further maintenance of life. Now there are some characters of these symptoms which deserve to be studied a little more carefully. They are not cases of septicæmia, for there may be no suppurating lesion whatever, even no inflammation, and yet the symptoms strongly impress us as being signs of blood-poisoning. We have long been familar with the very suggestive effect on the circulation of experiments on the great sympathetic system. The quantity of blood circulating in a part is increased, its rate of movement accelerated, its temperature elevated, and its color changed by division of the sympathetic.* All these facts indicate not obscurely the conclusion that the blood itself may suffer an immediate and serious lesion of its integrity as a consequence of violent shock to the nervous system. Nay further, when we add to what has just been said, the appearance of the vital fluid in death by lightning, I do not fear to propose that the blood may undergo an almost total disintegration of its corpuscular elements, as the result of ordinary and profound shock. We are accustomed to say, as we have already done, that these are cases of excessive reäction, and so they are; but we want to get a little clearer understanding of the pathology of what takes place. It is a begging of the question to say that a hypothetical nervous fluid has been destroyed, and is being slowly or not at all reproduced. Such a fluid has not and can not be demonstrated, and its existence must be assumed as one of the terms of the proposition. A substance so attenuated as to escape the reägents of the chemist and the microscope of the histologist, is too subtle to play so vast a part. In some instances, in which the lesion is so sudden, overpowering and irreparable, we are reminded of what Williams has, with such force, said of death by necræmia, a designation undoubtedly entitled to position in our nomenclature, and which he was the first to employ. "The blood," he says, "the natural source

* Dalton's Physiology, Edition 5, p. 538, et seq.

of life to the whole body, is itself dead, and spreads death through the frame instead of life."* If we accept the proposition that the integrity of the blood is impaired or destroyed in extreme shock, we account at once for all the phenomena of traumatic delirium—prostration with excitement. No organ can perform its functions without a proper supply of good blood, and especially are the delirium and coma evidences of malnutrition and anæmia of the brain. It is believed that in the near future, as in the recent past, the most important facts that lie in the path of our advancing pathology will be those discovered by a closer study of the vital relations of the blood-corpuscles. It is quite certain that wounds repair slowly and imperfectly, and that all the secretions are more or less suspended or vitiated by prolonged shock. Not only are the vital organs embarrassed, but every glandular viscus must suffer abatement of its normal functions. Propositions like these, and they are sufficiently well established, open up a very wide view of the possible sequences of shock. The kidneys notably become speedily deranged, secretion is scanty and high colored. Albumen may appear early, and what is more unfortunate, may be persistent. Structural change in these organs, even desquamative nephritis, has been revealed by autopsies following the shock of great wounds. The phrases constitutional and local irritation, but a little while ago so popular with surgeons, and still largely used, are but modes of expressing the general and local effects of shock. The bladder is frequently thrown into a condition of paralysis, and unless relieved soon becomes overdistended. The opposite state of suppression of urine often exists; either the original shock has been communicated to the kidneys and paralyzed them, or the ensuing irritation has reached them and excited undue contraction in their capillaries, and so checked all secretion. Such experiences are by no means uncommon after severe operations and injuries, and the judicious surgeon will be sure to inquire as to the possibility of their existence. The irritation of the stomach evidenced by persistent neusea, and the cardiac disturbances so alarming in character, have previously been mentioned. The liver also comes in

* Charles J. B. Williams, Prin. Med., 1864, p. 449.

for its full share of the systemic distress. It is well known that the hepatic secretions become affected by injuries. In wounds of the head it was long ago declared that abcesses might be formed in the liver under the influence of sympathetic irritation. Frequently the trouble in this quarter is indicated by vomiting and purging of bile, oftener still the latent disturbance in the liver is shown by a jaundiced hue of eyes and skin, while the total disappearance of bile in the evacuations indicates the gravest form of this irritation. It can not be out of place or unimportant to dwell upon these visceral irritations, for when rightly interpreted they furnish valuable indications for treatment. Among occasional remote effects are to be mentioned persistent neuralgias, cephalalgia, myelitis of the cord, vertigo, partial paralysis, paralysis agitans, hallucinations, and various neuroses. Not seldom has the shock of depressing emotions, as sorrow or irremediable grief, been known to end in confirmed melancholia or despair, and even in imbecility of mind or permanent mental alienation. A study of the direct and remote phenomena of shock is but an inquiry into the reciprocal operation of influences on the mind and body.

TREATMENT.

According to the tenor of the foregoing observations, the treatment of shock is appropriately ranged under three heads: (1) That which may be termed preventive. (2) That which should be instituted during its existence, and (3) that which is intended to control or modify its sequences. The prophylactic treatment must always be most feasible in surgical procedures. The great commotion of unexpected accidents or wounds comes upon us as it comes upon the patient, without warning; but the prudent surgeon, when preparing to do his work, will deliberately place his subject in the very best state for encountering the agitation and dejection which he knows are to a great degree unavoidable. As a preliminary to the administration of an anæsthetic, diffusive stimulants, particularly brandy, have been often given. It was the almost universal custom with the Confederate surgeons in the late war. In this service chloroform was the agent almost invariably employed.* The surgeons

* Manual C, S. A., p. 69. A. Y. P. Garnett, an Address, etc., Virginia Medical Monthly, April, 1878.

of the Union armies did not confine themselves to this remedy, and did not think the preliminary use of brandy imperative. With the feeble and timid the practice is no doubt a good one, and should not be omitted. Yet it is equally certain that the indiscriminate use of brandy before giving chloroform must in some cases be prejudicial. In those whose powers of resistance are below the normal standard, brandy ought to be given. But if the depression is not very great, the pulse even and full, and the respiration unembarrassed and regular, there can be no good reason assigned for the practice, and when such an agent is not necessary it may very well be supposed to do harm. The danger is that the early excess of action so induced may tend to exhaust power, the conservation of which should be an elementary object. It is a cardinal rule, that in emergencies we should husband all the resources with which the organism is endowed. Whatever is done must be done conservatively; no power is to be wasted; no vigor needlessly expended. Improper stimulation consumes the very force which is our chief reliance, and a very little of which in an exigency goes a long way. It is not to be forgotten that there comes a time after every considerable operation when an appeal must be made to the excitability of every function, and the prospect is forlorn indeed if the reserve of force has been already exhausted. More rational by far, in most cases, is the administration of tonics. There can be no doubt whatever of the very great value of the sulphate of quinine when so exhibited. With this comprehension of the subject, I have for several years almost uniformly given that drug immediately before important operations. I have again and again had occasion to remark its vast usefulness in the prophylaxis of shock; not only in ordinary wounds and injuries and operations, but in protracted and severe labors. I believe that I have some claim to priority on this point, and that it is due to myself to restate my views. Singularly enough, Dr. Edwards, of the "Virginia Medical Monthly" for August, 1878, publishes an editorial note, in which this plan is mentioned as original with Dr. Hunter McGuire. I say singularly, for in this same journal my views have been more than once published. Both for the purpose of placing myself right and

of still further calling attention to what I feel is a very important matter, I reproduce the editorial referred to:

"*Quinine to Prevent Surgical Shock.*—In a private conversation a few days ago with Dr. Hunter McGuire, he stated to the editor that he had seen some time ago a case of compound comminuted fracture of the ankle-joint occur in a nervous man unattended with shock of injury. Amputation of the leg was performed two hours after the injury, and still there was no appreciable shock. Upon inquiry he found the gentleman had taken that day about fifteen grains of quinine. Dr. McGuire thought it probable that the shock was prevented by the cinchonism. Since then he has been making some experiments by giving quinine before performing serious surgical operations, and has been led to think that slight cinchonism prevents shock of injury, or so lessens it as to make it inappreciable. If cinchonism will keep off shock, it is one of the most important facts in surgery."

This is all very well, and no one, not even my friend Dr. Edwards, entertains a higher opinion of Dr. McGuire's talents and skill than I do; but it is proper to say that the accidental practice in this case I have deliberately carried out for a long time, and the results are those which I have instituted the treatment to achieve, and have nearly always witnessed. With this effect of bark I have long been familiar, and my first expression of it is contained in a manuscript paper of mine written in the fall of 1873, never published, but still in my possession. More than once, however, I have distinctly put on record my observations on the point. In the "Virginia Medical Monthly" for July, 1876,* my view was clearly stated referring to the perils of difficult and protracted parturition. "The urgent necessity when the patient is so endangered for the exhibition of a remedy which proposes to rescue from exhaustion, as well as exert a valuable prophylactic effect in the recovery, can not be otherwise than sufficiently obvious. If it be remembered that the nervous shock is not in proportion to the length of the first stage of labor, but of the second, we can not be mistaken in reference to the indications for the employment of our remedy.

* Art. Quinine in Parturition, p. 242.

Nor is it to be forgotten that the importance of shock as an element of disease in parturition can scarcely be overestimated." Again, in a little paper last year on "Hæmothorax Treatment by Aspiration," I state, alluding to the danger of fatal prostration from protracted shock, "to anticipate such a catastrophe, such prophylactic agents as quinine and opium are to be given, and early attention should be directed to the reëstablishment of the deranged or suspended secretions."* A still more recent experience has only served to confirm the opinion that the peculiar tonic properties of quinine will enable the nervous system to anticipate, as it were, the period of collapse. Last winter I attended with Dr. Skipwith, of this city, a tedious and prolonged labor in a primipara in which craniotomy was finally done. Quinine was freely administered during and immediately subsequent to the confinement with the happiest results, the febrile disturbance ensuing was transient and barely perceptible. I might go on to mention many cases, known to my associates, in which I have given the drug with the distinct object of preventing exhaustion and limiting shock. In the abdominal section I have exhibited quinine, just before and after operating, with no other view than this, and in all major surgical procedures I believe it ought to be given. I am trying to write a practical paper, and do not care to theorize about the matter, but I am sure of the fact, and am much gratified that Dr. McGuire has independently reached a similar conclusion.

When a patient is about to endure some severe trial of fortitude or capital operation, it is evident that the mind should be fortified as far as possible to meet the commotion that must inevitably follow. A few directions in this relation ought to be insisted upon. A frank, open, cheerful demeanor, free from levity on the one hand, or on the other moroseness; kindly encouragement, a favorable but fair statement of the outlook, with the assurance of intelligent and honest efforts to help him will go far toward securing for the subject the very best frame of mind. Above all, too much babbling and injudicious talk is to be avoided. The generalities, weak platitudes and stereotyped consolations so common at such times are worse than useless; they tend to

* Virginia Medical Monthly, October, 1877, p. 495.

confuse and distract the mind, and are in the highest degree opposed to that tranquility so essential. It is lamentable to see with what a babble of tongues the poor sufferer is sometimes assailed. This is all wrong. The patient's thoughts are not to be burthened with affairs; his inquiries are to be patiently and frankly answered, and every encouragement afforded him which a sanguine view of the case will admit. If the surgeon himself is quiet, composed, self-reliant, his patient soon feels the exaltation of a similar temperament, and coming to regard his attendant as master of the situation, the mind passes from a state of agitation to one of calm and hopeful confidence. In a word, the patient is to be prepared as carefully as may be for every important operation. If the subject is to submit to the knife for the cure of deformity, for the relief of chronic disease or injury, he should be confined to his bed for several days previously, so that his system may not be surprised, as it were, by a too sudden change of his habits. This was a leading rule of a great and successful American surgeon, and long before Dudley's day Travers asserts that his friend, Mr. Young, in cutting for stone or other such cases of surgery, used to put his patients to bed some days beforehand.

As to the propriety of stimulation during the period of actual shock, there has been little difference of opinion. Army surgeons, as a rule, have concurred in the practice, and have almost without exception regarded brandy as the very best agent of its class. Whatever may be the theoretical objections to such a view, and they are now quite fashionable, surgeons have always practically accepted the conclusion of Brunton and Burdon Sanderson, that alcohol possesses a definite food value.* The practice of the ablest surgeons from ancient times until now can only mean that they adopt the opinion that alcohol is in a very important sense a true food, an inconvenient and unnecessary food in health, but highly suitable and serviceable in some diseases. In the rather remarkable discussion which took place in the surgical section of the American Medical Association, 1873, Drs. Hodgen, Banday, and Gregory claimed that stimulants in shock did harm rather than good. The first

* London Lancet, Oct. 13, 1877, p. 542.

of these gentlemen, who opened the debate, after explaining what he understood to be the process involved in shock and deprecating the use of stimulants, said: "I have acted upon this theory in the management of patients who were laboring under shock, and I have seen many cases of patients who have had limbs crushed by railroad cars, and many suffering from gunshot injuries; and it has been my practice within the past ten years to give no stimulant, to give absolute rest, exclude light, admit fresh air, and not to disturb the patient in any possible way, even by transportation, unless it is actually demanded, and my success has been better than it had been before. I have had, when the reäction came on, not that violent reäction; it has not amounted to a reäction; it has not gone so far beyond the point of normal health." The Doctor's practice, he informs me, is still the same. Any opinion of Dr. Hodgen is entitled to great weight, and everything he has said on the subject shows how clearly he has studied it from a physiological standpoint. But it is proper to say that there is a vast experience opposed to this view. No observation is more common than that rapid and decided improvement takes place when stimulants are cautiously administered in shock. The argument of the Professor is exceedingly ingenious and difficult to meet theoretically,* but as a matter of practice, most surgeons will hesitate to give up brandy. That vitality is reïnforced, the circulation recalled and functional activity in general sustained by judicious stimulation, are facts every day noted. We think there can be no mistake here, and that the failing powers cry out through all the symptoms for help in a struggle that has become plainly unequal. If left to do their work unaided, it must be performed at great disadvantage. I do, however, verily and fully believe that overstimulation is worse by far than none at all. Let us, for the purpose of reaching a better understanding, enter into the subject a little more fully. As typical of the condition in consideration, let us suppose extreme shock, collapse. "Our object is to maintain, and if necessary to excite, a sufficient amount of action for the purposes of life, till the system is enabled to rally from the exhaustion produced

* Remarks on Shock. By J. T. Hodgen, M. D., etc., 1870.

by the shock. A certain amount of action is essential to life. The heart must beat and the patient must breathe." Here it is necessary to make the distinction between collapse, the result of hæmorrhage, and collapse unattended by dangerous bleeding; which of these exists has an important bearing on both treatment and prognosis. First, then, of those cases unaccompanied by a large loss of blood. Suppose the most unfavorable case in which we detect no sign of life, is nothing to be done? If we fail to discover movement in the heart, can nothing be done to excite it? We think, most assuredly, the case should not be given over, that something should be attempted. We know that many of these cases make surprisingly good recoveries. As the circulation fails the temperature is lowered, but we can not trust to nature so far as to allow the body to grow cold. The surface heat may be maintained by artificial warmth, by brisk friction, by cataplasms; and stimulants should be given hypodermically or by enemas. Nothing could be more pertinent than what Travers says in his work on constitutional irritation, and I transcribe: "If we neglect to supply stimulus when called for, the spark of life goes out. The signs of its indication must therefore be vigilantly observed. We are maintaining action on inadequate power, in the hope that the natural resources may come to our relief, and that we may gradually diminish stimulus and increase nutriment, which is our only method of raising power to a balance with action." It is not by any means an original observation that nature is a good physician, but bungling surgeon. And so in this case I think if left to herself she will make heroic efforts, but exhaust all her resources without achieving any salutary result. However, therefore, we may reason or whatever we may wish to believe, we must come back at length to the very plain indication, gathered from many symptoms, and the tendency toward general failure and exhaustion for stimulation. Warmth to the surface was secured by the early surgeons by placing the patient, deprived of clothing, between two persons according to sex, also stripped, or even by covering the body with the warm skin of an animal just slain. Liniments, clothes rung out of hot water, and various epithems were applied to different

parts of the body. Turpentine stupes, and even vesicants to the head and epigastrium, have been used, while ammonia, ether, camphor and the aromatics are still popular remedies. Whatever be the means employed, they should be gradually relinquished as soon as vascular reäction begins to be manifested. Above all, the patient is to be diligently guarded against over-excitation, excessive reäction. Of course the necessity and indications for the administration of opiates will readily be suggested. Sometimes the mental consternation is so great that in spite of all our efforts the person continually relapses into the most alarming prostration, the pulse and respiration only rise to go down again at every fresh accession of terror. In such a case, unhappily not an infrequent one, the patient must be made oblivious to the situation, freed from his morbid dread; in a word, the moral element of the case must be eliminated at any cost. He is verging upon a very perilous state; he is near trembling delirium, excessive vascular excitement and coma. Opium in one form or another is indicated. The patient must rest, he must sleep, and very often doing so he awakes refreshed and composed. It would not be proper to omit a warning. When delirium occurs, its passage into coma should be dreaded, and narcotics are to be used cautiously, if at all, and perhaps only in combination with camphor, ammonia or other restoratives.

A word or two in regard to the specific respiratory stimulants. I am convinced, theoretically and from actual experience in their use, that they are of very great value. The embarrassment of respiration is not seldom a distressing symptom; sometimes the appearances border on real coma, when the respiratory organs are failing from paralysis. The sulphate of atropia not only improves the capillary circulation, bringing heat to the surface, but under its administration the breathing is quickened in an extraordinary manner. I do not know whether this use of the drug is original with myself or not, but I so used it before I had seen any account of the practice, and in a little article over twelve months ago gave my opinion of its value. But it may be in spite of all our efforts, or possibly promoted by ill-advised efforts, that the patient passes into

excessive reäction. The gravity of the prognosis is now immensely increased, for under any circumstances the condition is a hazardous one. The symptoms are not to be mistaken; there is at first dry heat of the skin, a flushed and anxious face, a rapid, bounding pulse, hurried and defective respiration; there is usually great præcordial oppression, and urgent thirst; the tongue is tremulous; there is great restlessness, and often constant aimless movements of the body. The delirium varies, is said to be most frequent at night, and is of every degree from occasional incoherence to the fiercest excitement. No apology is made for referring to Travers' great work already so often quoted. The respondence of the circulating forces to an increased supply of stimulus must serve as a caution against over-supply. Since power is deficient we must carefully husband our only resource, and not waste it in inordinate action. When the signs of reäction are manifested its excess is much to be apprehended, if such reäction has been obtained by over-stimulation. Excessive reäction so induced is "prostrated with excitement" in its most perilous form. When such a state is the original form of the malady it is probably less dangerous, because in this case the inequality between power and action is less. There is evidence of the hand of a master in every word of this. To the complexus of symptoms already enumerated other rational signs are to be added; the secretion of all the glandular organs is more or less impaired. The time has evidently passed for the administration of opiates, except in a modified and cautious way. Immediate attention is to be given to the reëstablishment of the deranged secretions. The kidneys, the liver, the skin, must all be appealed to, not violently, but certainly. It is also to be recollected that the condition, however high vascular excitement may go, is really one of debility, and hence tonics, not stimulants, are indicated, and if the patient is not absolutely to sink out, nutrition must be kept up. The combination of cardiac sedatives, diaphoretics and diuretics with tonic is a useful one. In this way may be given quinine, digitalis, gelsemium, aconite or veratrum.

Again, before undertaking any serious or capital operation, the state of both mind and body ought to be investigated, and

if any unfavorable condition which may be found to exist does not admit of correction, the fact is to have due weight in deciding the propriety of proceeding. If an operation has been determined upon, it is unwise and cruel to postpone its performance without the best reason for doing so, as doubt, suspense, and anxiety in most people create very unfavorable states of mind and draw largely on health and strength. Certainly, in every operation of expediency, and they are usually fatal enough, every precaution ought to be taken. A little forethought and patience on the part of the surgeon costs so little and may save so much. He who would move with ease in the higher walks of a great profession, must also descend with grace to infinite details apparently trivial, but which, in reality, are not so, as they are but too often influential in determining the safety of the patient. It remains to be said, if there be great loss of blood in profound shock, our chances of success are very much diminished, and when collapse comes on in such a case the probabilities of recovery are very small. It will not do, however, to abandon all hope. The patient must be kept strictly in the horizontal position and closely watched. If the heart refuses to act, it must be excited to do so. If the patient can swallow at all, brandy is the best of stimulants, and generally the most convenient; its effects are to be relied on most, and the stomach retains it best. Stimulants alone are required at first, but they soon become useless or worse if nourishment is not also given. The two may well be given in combination, and as the system recovers, stimulants may gradually be omitted. If there has been considerable hæmorrhage, the demand for nourishment in the most assimilable form is very urgent, and reäction is usually tardy.

It is a very important and interesting question which relates to the period at which an operation should be undertaken after a severe injury. If a part is hopelessly disorganized, condemned, and it is decided that no effort is to be made to save it, and at the same time the shock is extreme, ought we to proceed at once? or what degree of reäction is sufficient to justify an operation? These are questions which require the nicest judgment for their solution, and the clearest and readiest apprecia-

tion of the consequences involved in the decision. Many good men contend, however low the case may be, that we ought to operate without any delay. That accomplished surgeon, my friend Dr. Hodgen, of St. Louis, is among those who do so believe.* Gentlemen who entertain this opinion say that by amputating at once we cover, mask, and identify the shock of the operation with that of the injury. No doubt there is considerable plausibility in such reasoning; but little if any additional shock can be inflicted where there is almost total insensibility to pain, and the hazards of hæmorrhage must be only imaginary when the heart has almost if not quite ceased to beat. It is also argued that if we delay till even a certain amount of reäction has occurred, that by our operation we invite the system to encounter the perils of another great commotion. In this way, it is said, that if the patient barely escape death from the shock and injury in the first place, he will be poorly fit to meet the second tax on his enfeebled resources of an operation. It is my desire to present the subject fairly, and the question recurs, is it justifiable to amputate immediately under such circumstances? Is it advisable? Of course, now we speak of those tremendous lacerations or comminutions of structure in which operation must be done in a few hours, at farthest intermediately, to give any hope of success, and in which a delay to the secondary period is out of the question. Practically opposed to the idea of the propriety of operating in extreme shock is the fact of the all but uniform fatality of great procedures so undertaken. Of 72 primary amputations at the hip-joint for gun-shot injury, only one is certainly determined to have been successful (Circular No. 7, S. G. O.). Even adding the three uncertain ones, the results in the late war did no more than barely place primary amputation at the coxo-femoral articulation within the

* St. Louis, Aug. 27th, 1878.

Dear Doctor,—Yes, you understood me correctly. In railroad accidents, when both limbs are crushed and demand amputation, I operate at once. Now this would not be the case if I did not see the patient for some hours, and when there was beginning reäction; then I would wait until it was full. But seeing a patient immediately after injury, I would amputate *immediately*.

* * * * Very respectfully, J. T. Hodgen.

Dr. E. T. Easley, Little Rock, Ark.

domain of legitimate surgery. If we inquire for the causes of death in these cases, the answer must be, the shock of the injury and operation combined. It has been asserted that an operation done under extreme shock has the effect of arousing the system. If it be true that it will thus sometimes make a transient display of action, it is also true that the transitory effort is at the expense of that power of which there is so little to spare.

"Of all means of exciting action," says Savory, "this is the least economical." After all, it must be a mistake to suppose, as Copland and others have done, that pain is in any true sense a stimulant. The system when depressed may indeed respond to some extent to a slight degree of pain, to counter-irritation, or friction, but it is sure to be still further exhausted by anything like protracted or severe suffering. So, for example, if we amputate without anæsthesia or stimulants, we find that the patient not only does not rally, but that he is still more prostrated. I am not more certain of anything than I am of this. The surgeon's duty is not only not to inflict pain, but he ought to be constantly solicitous to relieve it. Excessive pain is always to be avoided. I believe that it is never conservative; it may even, when sufficiently intense and prolonged, destroy life, and infallibly by so much impairs the character of every prognosis in which it enters as an element. If we can do no more, people have a right to demand of us relief from pain, and our resources are so great that he who inflicts needless pain or allows his patient long to endure its agonies, is behind the present state of our knowledge.

In many cases it is doubtless not proper to wait for complete reäction; yet it is doubtful if, in any, it is best to operate in extreme shock. It frequently happens that a mangled or crushed limb delays the reäction. When such is the case, and no response is made to proper stimulus, there can be no good reason for delay; the offending part should be removed. How far the patient ought to be expected to rally before operating, is a question which can not be determined by rule. Much must depend upon the symptoms in each particular instance, and much in every case falls upon the judgment of the surgeon. It is to be

remembered that the impression of an operation under such circumstances is generally less marked than if no previous shock had been sustained. If it is thought best to operate in case of extreme shock without waiting for any considerable reäction, it is perhaps also best not to administer chloroform. It is generally laid down that, under such conditions, the agent is positively contraïndicated; at any rate, it must be given with great caution. In desperate cases the prominent reasons for anæsthesia do not exist. The sensibilities are so blunted that the pain and shock of a consecutive operation can not be very great. It would perhaps be safe to say that the extent to which chloroform may be given (assuming always that it is the best agent of its class) should be governed principally by the degree of the depression. But aside from this point of its probable contra-indication, there is no remedy so useful and so convenient in calming mental agitation. It is both manageable and effectual, and is of inestimable value in many respects. We have almost come to regard it as Sydenham did opium, *magnum donum dei.* With such a means at his command, the surgeon can no longer apologize for permitting his patient to remain in a state of consternation and pain. Under its benign influence we may perfect our diagnosis, look the situation quietly in the face, and bring together all our resources, whilst unconsciously to himself the patient is collecting his own.

ART. II.—*The Ophthalmoscope as a Diagnostic Means in Various Forms of Disease.* By JOSEPH A. WHITE, A. M., M. D., late Professor of Eye and Ear Diseases in the Washington University Medical College. [A paper read before the Medical and Surgical Society of Baltimore.]

Mr. President and Gentlemen,—You are all aware that for some years past the ophthalmoscope has been making a place for itself outside of its limited range in detecting diseases of the fundus oculi only. In this respect you know of the wonderful change the discovery of this instrument wrought in ophthalmic medicine, and it is needless to more than simply refer

to its perfection as a diagnostic means in diseases of the retina and optic nerve.

But as the knowledge of its uses and application became more advanced and extended, connections were traced between these ophthalmoscopic changes and different constitutional diseases, and an almost entirely new field of research was opened up in which its use as a means of diagnosis of different diseases, and especially in troubles of the nervous system, was clearly demonstrated. In the investigation of these latter affections the ophthalmoscope is of such incalculable advantage that every physician who wishes to speak with authority on this point must know the ophthalmoscopic appearances in every case and in every phase and change of the disease. All physicians could very easily become acquainted with its use; and although those in large practice might be deterred from attempting this from an idea that it requires long practice and much study to do so, they would find on trial that it is comparatively easy, and the absorbing interest of the study makes it a pleasant one. It is true that it requires constant work to acquire sufficient proficiency with the instrument to diagnose the exact degrees of "errors of refraction," but this amount of skill is not necessary to obtain merely the details of the fundus oculi, which is all a general practitioner need know to aid him in diagnosticating certain troubles. He would find that he could do this with sufficient accuracy in a short time.

Its use has become much more general abroad than in this country, because the course of medical studies is here so short that the medical student hardly finds time to accumulate a sufficient amount of medical and surgical knowledge to pass the superficial examination he must undergo. His time is so occupied that he has no leisure to investigate the uses of such instruments as the ophthalmoscope, however valuable such knowledge may be to him in his professional career. That it is of undoubted and in some instances of invaluable assistance, I hope to be able to demonstrate.

Here allow me to say that in this paper I make no pretence to originality or discovery, but am only an humble follower in the footsteps of more worthy investigators, to whose researches

I am mainly indebted for the material herein contained, submitting side by side with the results of this experience whatever examinations I have made myself. That signs of changes in the nervous apparatus were to be found in the eye was known long ago. Such symptoms as double vision, intolerance of light, the so-called amaurosis, contraction and dilatation of the pupils, paresis and paralysis of the motor muscles of the eyeball and eyelids, have all, long ago, been observed in connection with cerebral disease. But the discovery of the ophthalmoscope enabled us to trace the connection between eye symptoms and intra-cranial disorders still more accurately. We are indebted to Helmholtz for the discovery of the eye mirror, which he first described in 1857; but it is to Sichel and Von Graefe that our thanks are due for drawing attention to the great importance of studying the morbid changes of the optic disk and retinal vessels in connection with other diseases. Graefe first published an essay on this subject in 1860, and since then there have been many earnest workers in the same field of observation.

That changes take place in the *optic nerve* in cases of intra-cranial troubles oftener than in any other nerve of special sense, is a fact that does not need demonstration, and is, no doubt, attributable to its greater vascularity, its large share of connective tissue, and to its extensive connections with the base of the encephalon. That these changes take place much oftener and in a much larger percentage of cases than we have any record of, I do not doubt; and if physicians and ophthalmic surgeons would work more in unison, if consultation could be had between them in all cases of optic-nerve trouble and those of intra-cranial and spinal disorders, the intimate connection between changes in the fundus oculi and symptoms of nervous disorders would be established in nearly every case.

The patients now go to the physician or the ophthalmic surgeon, according as the nervous or eye symptoms predominate, and in both instances the other train of symptoms may escape notice. On the one hand, the nervous disorder may not be observed by the ophthalmic surgeon; on the other, the eye symptoms may not be noticed by the physician. That we can have marked alteration on the optic disk and retina from simple

congestion up to true neuritis without interfering with vision, is a fact already proven beyond question, and this explains how easily such conditions can be overlooked by both patient and physician.

But the ophthalmoscope is not only of great value in intracranial and spinal disorders; it has also been discovered to be of use in the diagnosis of diseases of the heart, sclerosis of the arteries, in hæmorrhagic diathesis, in leukæmia, in lead poisoning, in renal disease, in syphilis, etc.

I do not propose to enter into a description of the various forms of the ophthalmoscope, for you are more or less familiar with them; nor go into details of the anatomy of the optic nerve and retina, except in as far as may be needful for a right understanding of our subject. I will simply give you the healthy condition of the fundus oculi as a standard of comparison for the pathological changes I shall refer to. The ophthalmoscope I generally use, and the best and most complete that is made is Landolt's metrical ophthalmoscope, which has two mirrors, a two and four-inch object lens, and the whole series of spherical lenses, concave and convex, and a stenopaic plate. All that is required, however, for general use is a small concave mirror of about twelve-inch focus with a very small central perforation, and with a clip at the back for holding a correcting lens when needed; besides this a two and a four-inch convex lens for the indirect or actual image will complete the outfit.

When we first look at an eye through the mirror we find the reflection of the light from the fundus gives us a red instead of a black pupil, and out of this red expanse we can very shortly learn to define the optic disk and retinal vessels. The general aspect of the disk is circular, or slightly oval with the long diameter vertical. The color is a compound one, made up of red from the nutrient capillaries; white from its connective tissue, and yellowish-gray from the nerve tubules, the whole producing a cream color warmed by a pink tinge. This varies slightly in different subjects; some disks being higher colored than others, just as some faces are. The inner half is always more decidedly tinted than the outer half, and the whitest part is the centre, where a bundle of connective tissue surrounds the

central vessels. Here the surface is sometimes depressed, forming what is known as the physiological pit. The circumference is generally a zone of white from the sclerotic surrounding the disk with a brownish-gray, or decidedly pigmented outer boundary from the choroid.

The *vessels* of the disk itself are almost invisible, save a few small twigs which pierce the disk, and sometimes radiate on to the retina. The vessels we see ramifying over the fundus oculi are the central artery of the retina and its accompanying veins. The artery pierces the disk near its centre and divides into an upward and downward branch, which, by repeated bifurcations, spreads over the whole retina, except the yellow spot. The corresponding veins enter the disk separately, sometimes two to each artery, are larger and darker than the arteries and more tortuous in their course. Sometimes they have a spontaneous pulsation near their entrance into the nerve, and nearly always this will follow on a slight pressure of the eyeball. (Donders.) The vessels all look like red tubes with shining, bright centres and darkened edges. In the arteries this central streak is more marked than the veins, because they are more cylindrical. The retinal arteries are derived from the ophthalmic artery, and the veins empty into the cavernous sinus through the ophthalmic vein. The peculiarity of the retinal circulation is that there is no pulsation in the arteries as there is in the general circulation; and, strange to say, the action of the heart can be often increased till violent palpitation at the chest and throbbing at the temples ensue without affecting the retinal circulation. (Loring.)

"No doubt," says Loring, "this is due to the regulating power of the intra-ocular pressure dependent on the watery or gelatinous contents of the globe and its more or less elastic membranes," though I do not see how he explains the fact that if this pressure is still greater, as in glaucoma, arterial pulsation results. On the other hand, according to Stellwag, if this normal pressure is relaxed by piercing or removing part of the membrane of the eye the same results follow, viz., pulsation of the arteries. Loring also suggests that from the very same cause, because of a compensating pressure which maintains a

given equilibrium throughout the medium of the soft substance of the brain and the cerebro-spinal fluid, the arteries of the brain no doubt follow the same rule as those of the retina, and do not pulsate in a normal state. In an abnormal condition the arteries of the retina often pulsate, and so may those of the brain. But this retinal circulation has not the intimate connection with the cerebral circulation that the nutrient vessels of the optic nerves have. These nerves arise chiefly from the corpora quadrigemina, the true centres of vision, taking a few fibres from the optic thalmi, cross the crura cerebri, take fibres from the geniculate bodies, then become almost cylindrical and run along the base of the brain to the chiasma or optic commissure, where decussation of their fibres takes place before they branch off to each optic foramen.

The whole of the optic tract is mainly invested by the pia mater, which gives off nutrient vessels to it; in addition, its nutrition depends, according to Galazowski, whose observations have been corroborated by others, upon, 1st. An arterial branch entering at the post border of the testes, called the post-optic artery. 2d. Four vessels, two arteries and two veins, which enter the optic tracts at the post border of the cerebral peduncles coming from the choroid plexus of the third ventricle, called the middle optic arteries. 3d. A large branch from the middle cerebral artery, the anterior optic artery; and 4th. Filiform branches from the pia mater to the chiasma.

Now, all these branches form a network which extends from the tracts to the disk and give the rosy tint to the latter, and you can easily see that this is purely a cerebral vascularity independent of the ophthalmic artery. The situation of the nerves also shows you how easily they may be affected by any intra-cranial trouble, especially at the base of the brain. As the nerve enters the eye it passes through the sclerotic, which forms an unyielding ring, slightly constricting the nerve; and the relation of this ring to the nerve, in certain pathological conditions, is of great importance. The nerve is invested by an inner sheath continuous with the pia mater, and by an outer sheath continuous with the sclerotic on the one hand, and the dura mater on the other, though differing in texture from both

of them (Sappey), leaving between the two sheaths a space, the sub-vaginal space (Schwalbe), the continuation, as it were, of the intermeningitic cavity of the brain.

I have no time to go into the few anomalies of the fundus oculi to be sometimes met with in a perfect state of health, as I have already taken up too much time in explaining the healthy appearances and the cerebral connections of the optic nerve and retina; and I will now pass on to the consideration of the pathological changes to be met with in the eye in connection with disease in other organs.

These deviations from a healthy condition are to be divided into the changes which occur in the circulation only without any alteration of structure, and those congestions with effusion, neuritis, and atrophy.

In making our examination we have to watch the optic disk, the retina, the choroid, and the blood vessels. Each of these parts is subject to various alterations, into the minute description of which you will not expect me to enter, as some of them have no bearing on the subject at issue.

The principal changes with which we have to deal in this connection are hyperæmia, active and passive, anæmia, œdema of the disk, the engorged disk, which Dr. Albutt calls ischæmia, true neuritis with perineuritis, which I have never seen except in connection with neuritis itself, neuro-retinitis, retinitis, consecutive and primary atrophy.

Hyperœmia, Etc.—With regard to active and passive, or arterial and venous hyperæmia of the disk or retina, or of both, we must be very careful not to confound them with healthy appearances. We must know how to discriminate in different cases, as the same condition in one may be physiological whilst in another it would be pathological. We must take into consideration the age of the patient, his complexion, the color of his hair and eyes, and the uses to which the latter are subjected, all of which will have more or less bearing upon the coloring and vascularity of the disk and retina.

In health, moreover, we nearly always find both eyes alike, whilst in the hyperæmic and anæmic condition there is usually

a difference between the two eyes, the difference being greater or less according to the cause of the trouble. It will be always more or less difficult to determine the lesser degrees of hyperæmia or the very beginning of anæmia, where there is exactly the same change in each eye; but it is a great help if, as is generally the case, we find the change more advanced in one than in the other.

In arterial or active hyperæmia of the fundus oculi we find the disk much more flushed than normal, sometimes uniformly red and its outline slightly clouded, whilst the retinal arteries are enlarged and full, with the smaller branches more numerous and pronounced, especially near the yellow spot. In the passive form, venous hyperæmia, the disk is not so much flushed and red, whilst the retinal veins are abnormally large, dark and tortuous; and if it has lasted some time, we may have an œdematous swelling of the retina just around the disk and along the larger veins. This form is frequently present in states of venous congestion dependent upon disturbances in the general circulation; or, it may be due to any local cause preventing return of blood from the retinal veins.

Anæmia of the disk and retina is the opposite of hyperæmia, depending upon emptiness of the blood vessels; but we must be careful to distinguish this condition from commencing atrophy or pallor of the disk. Anæmia of the disk is always accompanied by anæmia of the retina and choroid, and such eyes light up very badly, whilst in commencing atrophy the choroid is of normal tint. The vessels in anæmia are shrunken and not so sharply defined, although we can still distinguish the arteries from the veins; but in atrophy, although this latter distinction is commonly lost, the vessels stand out sharply defined against the white disk. Moreover, in atrophy the edges of the disk are sharp and staring, as it were, whilst in anæmia the general pallor of the fundus makes the disk less distinct, and sometimes a slight œdema clouds its edge still more. In addition, the subjective symptoms are different. In atrophy the field of vision nearly always contracts from the inner side, and in anæmia there is general feebleness of vision; in atrophy we have the history of a gradually-increasing amblyopia with scotomata or

black spots in the field, whilst in anæmia we have sudden fits of blindness with flashes of light; e. g., on rising from bed, relieved by intervals of almost perfect vision.

The causes of anæmia are the same as those of general or local anæmia. Dr. Fothergill, in speaking of "cerebral anæmia," says that pallor of the eye is of more diagnostic value than the condition of the skin. He says "the condition of the eye tells of the vascular condition of the encephalon, the blood supply of each being derived from a common source. In cerebral anæmia we have retinal anæmia, with pale optic disks and dull choroid tint. This is a uniform pallor, not a whiteness of one part and a vascularity of another. In the latter case we do not deal with cerebral anæmia."

Œdema of the disk is not often seen as a distinct disorder, but is most frequently the complement of other affections; of neuritis, of embolism of the central artery, of anæmia, etc. Macnamara reports a case where œdema existed without any other change in the fundus oculi in a patient paralyzed in all four limbs; and from the condition of the disk he concluded that there was also a serous effusion without structural lesion in the centres of motion, and the result of treatment conducted upon this diagnosis justified his assumption.

Ischæmia and Neuritis.—The most marked changes in the optic disk occur in true optic neuritis and engorged disk, which for a long time were confounded as one and the same thing, dependent upon inflammation of the nerve. But Græfe pointed out the difference between the two; the one, ischæmia or engorged disk, being dependent upon vascular arrest alone; the other upon true inflammation of the nerve fibres.

In the former we have trouble only at the disk, the trunk of the nerve being unchanged; in the latter we have a pathological condition of the nerve trunk as well as of its terminal end. In ischæmia the condition of the disk is due in most cases to obstruction in the cavernous sinus or ophthalmic vein, causing slight venous arrest and consequent swelling in the trunk of the nerve, which is then, as a result of the swelling, strangulated by the unyielding sclerotic ring, which embraces it at its entrance into the eye. Græfe shows that this strangu-

lation of the ring is a necessary adjunct in producing this condition, as pressure on the cavernous sinus alone would not be a sufficient cause.

In neuritis the pathological change is due to inflammation of the nerve trunk which descends to the disk; hence it is called "descending neuritis." The active agent in this inflammation is probably the connective tissue implicating the nervous elements and producing secondary vascular changes. Sometimes neuritis is complicated with or preceded by ischæmia, so that a differential diagnosis becomes impossible. The appearances of the two are as follows: In ischæmia the disk is swollen and projects forward, rising higher on one side and sloping down nearly to the level of retina on the other, being inclined or tilted to one side, as it were. Its outline is blurred or entirely concealed by a halo due to infiltration and excessive vascularity, which involves the retina immediately around the disk, but not to a great extent. Its color is sometimes a dirty gray and red mixed, when there is much passive effusion and capillary hæmorrhage; sometimes it is of a bright polished, moist appearance Dr. Albutt applies the term "mossy" to ischæmia in contradistinction to "woolly" which is used in connection with neuritis. The veins become very much enlarged and almost varicose, with a tortuous course knuckling over the edge of the disk.

It is astonishing how great this change may be and how long it can exist without disturbing vision in the least. In neuritis the nerve is swollen, but not so much as in ischæmia, and does not show the steep elevation of one side as in the latter. In ischæmia we have the minute branches and capillaries coming into view, but not so abundant, and we also have minute hæmorrhage on and near the disk. The distention of the large trunks is more marked than in ischæmia, and the color is different. It is more of a bright gray with a reddish tinge, and the exudation is more uniform and opaque, with marked striated outline extending farther on to the retina and involving more of its tissue. Light is generally more or less affected.

The causes of ischæmia (intra-cranial causes I mean) are whatever directly or indirectly distend the ophthalmic vein,

the slightest distention being made manifest by the "multiplying action" of the sclerotic ring. The three principal causes are meningitis, hydrocephalus, and tumors. Neuritis is due principally to meningitis or encephalitis, viewed as a symptom of head trouble; in this connection depending upon inflammation of some encephalic tissue, most commonly of the membranes. A chronic meningitis near the base of the skull is very certain to set up optic neuritis. Optic neuritis sometimes is due to the presence of tumor, but according to Albutt and Hughlings Jackson it is possibly because of a meningitis or cerebritis surrounding the tumor and extending along the optic tracts or nerves.

Sclerosis, hæmorrhage and softenings of every kind never produce either engorged disk or neuritis, and abscess very rarely and only when it has continued for a long time. These are generally followed by simple progressive atrophy.

Now this simple progress in atrophy is sometimes preceded by a hyperæmic stage, the stage of "red softening," or, as some call it, chronic neuritis, first described by Mr. Jonathan Hutchinson in speaking of tobacco amaurosis. The disk is too red, sometimes with slightly blurred outline, and the choroid is full of blood. This soon changes, and the disk becomes too white, the arteries being lessened in calibre until at last all traces of the arteries disappear, and the disk is very white. We divide atrophy into primary and consecutive; primary when not preceded by neuritis or choked disk, consecutive when it follows upon these appearances. Galazowski, H. Jackson and others have endeavored to point out distinctive characteristics for each, but they are of no importance, as both forms generally end in the sharply-defined white disk with shrunken vessels. In primary atrophy this definition of outline continues throughout, but the consecutive form is at first ragged and uneven. Sometimes we see a bluish slaty disk or bluish gray oftenest in connection with sclerosis, locomotor ataxy for example, and other spinal troubles, as also in the amaurosis of lead poisoning.

Now having examined such appearances of the fundus oculi as are known to result from intra-cranial disorders, are we to conclude that degeneration of the optic nerve always means intra-cranial disease?

I should say by no means, for this is not at all a demonstrated fact; but where we find choked disks, optic neuritis or commencing atrophy, and have no extra-cranial cause for them, we should regard them as very serious lesions, suggesting intra-cranial trouble, and necessitating great watchfulness. Moreover, we will not often be called upon to decide from these symptoms alone, but will have other manifestations to guide us.

Meningitis.—What is the value of the ophthalmoscope in this disorder? If we examine the reports of Dr. Albutt and Dr. Hughlings Jackson and Bouchut on this point, we will at once conclude that it is of great diagnostic value. This disease has various origins and different names, the most important being tubercular meningitis, found at all ages, but most common in children; from its seat, etc., it is sometimes called granular basilar meningitis.

It is generally considered a fatal disease, because in the experience of the profession at large nearly every case that presents well-marked symptoms of the disorder die. Where recovery has taken place, one usually concludes that a mistake in diagnosis has occurred. The results of the investigation above mentioned show that exactly the same neuro-retinitis takes place in the eye in cases that die and cases that get well—both with same train of symptoms. We have in both the ischæmia or choked disk, or neuritis or both; the former due to the general intra-cranial pressure obstructing venous return; the latter to extension of the inflammatory process along the pia mater enveloping the nerve. In the cases that got well the vomiting, fever, convulsive movements, etc.; in other words, the head symptoms were not so pronounced, but the eye changes were the same, and are consequently of great aid in the diagnosis of doubtful cases. One case reported by Albutt, which recovered and afterwards died from a second attack, showed the post-mortem traces of an old tubercular meningitis, and a recent one. Still the absence of changes in the disk will not exclude meningitis, as they are absent in a small percentage of cases. Some of the results of tubercular meningitis in the cases that recover are idiocy and blindness, and sometimes deafness.

In syphilitic meningitis we nearly always have true "neuritis

descendens," and this ophthalmoscopic sign is of great value.

In other forms of meningitis, e. g., in erysipelas, fevers, pyæmia, etc., it will also be of service to distinguish true meningitis from delirium caused by the action of the morbid blood on the brain.

In recent hæmorrhage the ophthalmoscope is of no value, at least of no great value, judging by the reports we have on this subject. It is true that neuritis can occur from an old clot acting in its capacity as a foreign body, just as syphilitic changes in the brain produce the same result, not because they are syphilitic in character, but only because they are foreign bodies; or a clot can excite optic-nerve trouble by setting up a meningitis. Apoplexy produces no change in the retina, although frequent ecchymosis in the conjunctiva or retina are of prognostic value in indicating impending apoplexy. Miliary aneurisms of the brain, which often are the cause of hæmorrhage, according to Lionville, can be diagnosed from the condition of the retina.

Softening of parts of the encephalon gives us no significant changes in the eye unless the disease involves the centre of vision, when atrophy would result. Abscess has never been recorded to produce change in the optic disk, but an encysted abscess might, by pressure on the central parts of vision, cause atrophy. Sclerosis generally produces atrophy of the disk, for it is found in general paresis, locomotor ataxy, and insular sclerosis or trembling palsy.

In locomotor ataxy the change in the disk may, and often does precede the other symptoms by some months or even years. This atrophic change is characterized by a general limitation of the field of vision commencing at the periphery, and by a want of sensibility for the red and green rays, with a general aversion to bright light. In nearly all chronic forms of spinal disease we have changes in the eye, the higher the seat of disease the sooner the changes set in. We do not understand the causation of these changes, but some attempt to explain them by the action of the sympathetic, as they do everything about which they know nothing. It is the fashion to make the sympathetic shoulder and account for everything which can not be otherwise explained.

Hydrocephalus is very destructive to the optic nerve, causing atrophy, but except occasionally the eye symptom would not be of much use in a diagnostic point of view, as the other symptoms would, in most cases, precede the optic-nerve trouble. Sometimes, however, in children who seem "to take very little notice" of anything, the examination of the disks might guide us in determining commencing hydrocephalus.

In concussion from fracture the ophthalmoscope, up to this time, has not been found to be of much service in determining the extent of the intra-cranial lesion; but in speaking of intra-cranial tumors we enter a field that has been well investigated, and in which the many valuable data discovered by the use of this instrument have proved its importance as an aid to diagnosis in determining whether any coarse disease of the encephalon is present or not in doubtful cases, and if present, some idea of its situation. Its nature can not in any way be determined by the ophthalmoscope.

Dr. Hughlings Jackson (a physician and not a specialist) says that the ophthalmoscope is invaluable in the diagnostication of these tumors; that in his opinion optic nerve changes almost invariably precede or accompany the manifestation of other symptoms of intra-cranial coarse disease wherever located; the *time* of the appearance of eye trouble depending upon the *locality* of the adventitious product. We can not always account for the presence of these optic-nerve troubles, but they do occur. The nearer the location of the tumor is to the base of the brain, the more frequently and the earlier the eye symptoms manifest themselves, and even in some cases precede all others except headache. These statements are confirmed by numberless autopsies verifying the diagnosis. Professor Foester, in his Handbook of General Ophthalmology, says that increased intra-cranial pressure from whatever cause is manifested by optic neuritis or choked disk; the former by direct or transmitted irritation of the optic nerve; the latter from distention of the subvaginal lymph spaces of the optic nerve by fluid compressing its vessels. In the former case vision is nearly always affected; in the latter the vision is not so often impaired. From this you can easily see how necessary is the routine use of the

ophthalmoscope in suspected intra-cranial disease, as even if there be no amaurosis present, we may still have marked optic-nerve changes, and these changes are nearly always double or in both eyes. Next to hemiplegia, there is no more decisive evidence of intra-cranial tumor than this easily discoverable pathological condition. It enables us at once to decide whether the nervous symptoms depend on "organic" or "functional" disease ("coarse" or "minute" changes). We can not say positively that the absence of these signs negatives coarse disease of the brain, but when present, as they are in nearly every case, they are of unquestionable value.

Another consideration is, that if we use the ophthalmoscope constantly in these cases, we may often be enabled to prevent amaurosis or defective vision by prompt treatment of the early stages of neuritis. Those who wait for the defective sight to declare itself before looking at the optic nerves overlook the early remediable stages of neuritis, and they also overlook the optic changes altogether, as defective vision may not occur from first to last.

Whenever I have been consulted in such cases, I always find defective vision, because I am not consulted unless there is some amaurosis. But if, as I have frequently done, I go into a hospital ward and examine the optic disks of a case with head symptoms of doubtful diagnosis, I have found engorged disk, or neuritis without any defect of vision whatever. Again, I have had persons consult me with defective vision whose disks led me, in the absence of every other cause, to the diagnosis of intra-cranial coarse disease. Some of them I lost sight of, but the subsequent history of others corroborated this diagnosis. In one, a sea captain, who died three years after I saw him, a tumor was found near the base of the brain. The gentleman who performed the post-mortem gave me no details beyond this. Another, a case of a lady who had a severe attack of double neuritis, and which I diagnosed from the history of the case as due to syphilitic deposit on the brain (in its capacity as a foreign body) died six months afterwards with every symptom of intra-cranial disease. I have a scanty report of various cases of this kind, which, of course, would not serve as data for sta-

tistics; and since I have wanted to give special attention to this subject in the last year or so, I have had very few opportunities of seeing such cases. In special practice they come before us but rarely, as in consequence of the head symptoms (vague though they may be) first showing themselves, the cases go to a physician; therefore I would ask the favor of seeing such cases when under the care of any of my friends here present.

Dr. Albutt sums up all the facts to be found relating to tumors in every part of the brain in his book on the ophthalmoscope, and concludes from these that this instrument is of the greatest value and importance in diagnosing such cases, and in some instances may determine the diagnosis. At the same time, he remarks that it is not of such value as to enable the practitioner to dispense with quick sense and very careful thought. With regard to locating the diseased derangements of the motility of the eye or the study of the field of vision, it will be of the greatest service in combination with the other symptoms. In examining the field of vision, the external half of the field may be defective (nasal hemiopia), a slow process caused by morbid process invading the centre of the chiasm; or we may have defect of the inner half (hiomonymous hemiopia) pointing to trouble between the chiasm and central origin. Derangement of motility of the eye, on account of producing double vision when there is the slightest perversion of function of one side as compared with the other, is a diagnostic symptom of the highest importance, and because of the definite anatomical relation of the motor nerves to different parts of the encephalon. These, with other symptoms occurring in connection with adventitious products in different parts of the brain, help to localize the affection, as well as the early or late appearance of optic-nerve changes. (Albutt's synopsis.)

To sum up, then, we may say that engorged disk, neuritis, or primary atrophy, should always be regarded as a grave symptom, in all probability associated with intra-cranial disorders when we can not find the cause in the eye or orbit. Moreover, in suspicious headache or other vague symptoms pointing to intra-cranial disorder, the ophthalmoscope should be used. If we find *engorged disks*, it generally means some adventitious

product causing pressure on venous sinuses. If double *neuritis*, it indicates caries, periostitis, or meningitis. If *atrophy*, it points most commonly to sclerotic process of some kind, but may come from pressure at the visual centres or to inflammation of the nerve anywhere in its course.

Retinitis Albuminurica.—Carter says: "Hundreds of cases are on record where the ophthalmoscopic examination led first to the suspicion of renal disease, and the examination of the urine afterwards showed the presence of albumen. This proves that the retinal changes very often take place in what is called the pre-albuminuric stage of Bright's disease, and therefore the systematic use of the ophthalmoscope should be advised on patients whose age and bodily condition render them liable to such degenerative changes as take place in renal disease. But as long as the ophthalmoscope is used only by the specialist, the early changes in their troubles and the lessons to be learned from them will be overlooked. I have on more than one occasion advised a patient to see his or her family physician, with a view of discovering any renal disease where it had been before unsuspected, my suspicions being aroused by the retinal appearances.

Sometimes the retina is not affected at all, and again it may be, as in a case reported by Dr. Jabez Hogg, that the retinal change may confirm the diagnosis of renal disease when no albumen or casts can be discovered in the urine even up to the time of death. In this case there were the whitish splotches from the fatty deposits, and minute hæmorrhages involving a great part of the retina, with occasional convulsions and other symptoms of uræmic poisoning, which induced Dr. Hogg to diagnose renal disease, confirmed by the autopsy revealing granular kidney.

Graefe thought that the retinal change was always pathognomonic of Bright's disease, but some authors differ from him in this, as they claim that they are found in other morbid states of the blood. The idea that Bright's disease is a systemic instead of a local renal trouble would seem to be confirmed by the ocular phenomena.

ADDENDUM.

As an addendum to the paper I have presented on the "Ophthalmoscope as a Means of Diagnosis in Cerebral and Mental Diseases," some of my colleagues here present have requested me to give them the ophthalmoscopic appearances in the dead and dying, and have asked whether these appearances can be of any value in cases of doubtful death.

In answer to this I simply quote, as far as I can remember them, the results of a few examinations made, I think, by Dr. Aldridge:

In one case of general paralysis, ten minutes after death, the retina in each eye was pale, the optic disk white and atrophied, with no vessels on its surface. The veins, however, could be seen after leaving the disk, but presented a beaded appearance.

In a second case, one of bronchitis with chronic disorganization of the brain, the first examination was made whilst the patient was in a dying condition. The disk was then well defined, of normal color, with full veins and rather small arteries. Eight or ten minutes after death the examination was repeated, and the disk was found to be perfectly white, with only one vein, the central venous trunk, which did not reach to the margin, though the branches were still seen on the retina, and had a beaded appearance; i. e., here and there the vein seemed empty. The arteries were not visible on the disk at all, being empty to its margin, but from there on to the retina they could still be made out very small and attenuated. Twenty minutes after death not an artery could be discovered, and six hours after, the retina had become yellow from the action of light.

A third case, when dying, had the pupils dilated with atropine, and the disk was found of a pale pink tint with small arteries and normal veins; but eight minutes after death the disk was dead white, the veins full, and the arteries began at some distance from the disk's margin; six hours after, the arteries had entirely disappeared, though the veins were still plainly visible and the fundus was yellow.

In a fourth case that had died of pneumonia, the disk was very white, the veins still full, and the arteries very indistinct; a few moments after death, and in six hours, the fundus was yellow, and no arteries could be seen.

Other cases are recorded, but all resembling more or less closely the foregoing. Here, then, we see that some hours (six or eight) after death the disk was white, the fundus yellowish, the arteries had disappeared, and the veins become beaded; i. e., irregular clots here and there in otherwise empty vessels. Therefore, the post-mortem retinal changes follow this order:

1st. The capillary pink tint of the disk gives way.

2d. The arteries empty themselves in the direction of their current.

3d. The veins empty themselves also in the direction of their current, but not completely.

4th. The red retinal tint of the fundus is bleached to a yellow color, this change being attributed to the action of light.

It may be objected that the disappearance of the capillary tint of the disk before the arteries empty themselves is an irregular proceeding, if we suppose the disk dependent upon the retinal and choroidal vessels for its nutrition; but, adopting Galazowski's theory of the independent circulation of the optic nerve and disk (already given in detail), there would be no abnormality in such a result; and, in fact, this very post-mortem change goes a long way to support his views.

The usual signs of death, cessation of respiration and circulation, absence of sense and motion, facies hypocratica, the extinction of animal heat and cadaveric rigidity, are generally satisfactory; but all these may deceive, we well know, as people have been buried alive, a fact occasionally and unfortunately well demonstrated. Therefore, in cases where a doubt could be entertained, the ophthalmoscope might be of service in satisfying such doubt.

Possibly by close attention to its use in this field by accurate observers, the ophthalmoscopic appearances at different times after death might be recorded and made valuable in determining *how long* a person has been dead. In this regard it would be especially valuable from a medico-legal point of view in deciding the sometimes vexed question of survivorship in one of two persons to an estate depending upon such decision.

ECLECTIC DEPARTMENT.

"Carpere et colligere."

ART. I.—*Laparo-Elytrotomy.* By THOMAS WHITESIDE HIME, B. A., M. B., Lecturer on Midwifery and Diseases of Women and Children, Sheffield School of Medicine.

The following is the first case of laparo-elytrotomy which I have heard of being performed in Europe.

On Sunday afternoon, July 14th, I was summoned by one of the midwives attached to the Hospital for women* to visit Mrs. O'M., who had been in labor (at full time) for over twenty hours without any advance of the child. On entering the wretched house, situated in a court, I was almost overcome by a most offensive stench. It was so horrible that I asked if pigs were kept in the house, really believing it was the case. I learned, however, that the unfortunate patient was the source of the fetor. I found her advanced in labor to the end of the first stage, the child being alive and in the first position, the head only entering the brim. The recto-vaginal septum was converted into a cancerous mass, compact, inelastic, and rough, which extended from the perineum to within an inch of the posterior vaginal cul-de-sac. The upper part of the posterior and the anterior wall of the vagina were soft and elastic, and the uterus was apparently quite healthy. The vagina was so narrowed by the new growth occupying its posterior wall that less than two inches remained for the passage of the child. Labor-pains had ceased entirely for over an hour.

History.—The patient was thirty-seven years of age, had been married ten years, and had borne nine children, pregnancy on each occasion lasting the full time. Four children still survived. During her whole married life she had been a rather heavy drinker, her habits in this respect being conformable to those of her husband. Her face and large fatty liver and heart gave evidence of this. Her last child was two years old. For

* Except in cases in which danger is anticipated, the midwifery of this hospital is domiciliary, and is attended to by midwives. The medical officer on duty for the month attends when summoned to complicated cases at the patient's home. Other arrangements are being made at present.

about a year after its birth she became very stout, but subsequently she lost much flesh, and was when seen a thin, badly-nourished woman. For the past eight months she had suffered from excruciating pain in the rectum, with occasional attack of severe hæmorrhage, and for the last three months her motions had only come per vaginam. There was a constant and stinking discharge from the anus and vagina. For the last eleven weeks she had been unable to get out of bed, from debility and pain; and for over forty-eight hours preceding my visit she had been incessantly vomiting, being unable to retain anything in her stomach. For some days she had been suffering from diarrhœa. The heart's action was feeble and irregular.

It was evident that operative measures alone could effect the delivery of the child, which was still alive. The limited size of the vagina, which was scarcely two inches wide; the nature of the obstruction, its unyielding character, and its disposition to hæmorrhage, as evidenced by the serious losses of blood which had frequently occurred spontaneously; and the fact that the child's head had not passed the outlet, precluded operation by the vagina without fatal laceration. Having then just read the very interesting paper by Dr. T. Gaillard Thomas, of New York, on Laparo-elytrotomy, I determined to try it, as the state of the woman was so grave that Cæsarean section would evidently cause instant death. As the patient assented to my suggestion, I had her removed to the Hospital for Women. Owing to the day and the hour, I could only get the assistance of one of my colleagues at the hospital, and I had great difficulty in finding one other medical man at home to help me. At 6:30 P. M. I proceeded to operate, assisted by Drs. E. Jackson and O'Keefe. Had the case not been urgent, I would not have operated with only three pairs of hands, as one of them, being necessarily occupied exclusively with the anæsthesia, the two others are insufficient in number (no matter how efficient) for what had to be done. But had the child descended into the pelvis, laparo-elytrotomy would probably have been rendered impossible, and fatal injury would very likely have been done. So further delay was unadvisable.

Operation.—I intended performing this operation under strict

antiseptic precautions, as I am in the habit of doing when possible, but unfortunately the spray belonging to the hospital was at the time being repaired, and one which I borrowed was not in good order. With the exception of the spray I employed antiseptic measures. The patient having been placed on the operating table and chloroformed, I made an incision through the abdominal wall in the direction of a line extending from the spina ilii ant. sup. sinistr. to the spina pubis. After a little difficulty in distinguishing a layer of fat which simulated the appearance of the omentum, the peritoneum was reached and readily recognized, being much more ample than in non-pregnant women, and hanging in folds at the bottom of the wound. I next passed a blunt probe up the vagina, and by it pushed the anterior vaginal cul-de-sac into the wound. Seizing this with a pair of hooked forceps, I divided it, and passing my finger through the orifice, felt the os uteri. Some slight difficulty was experienced at this part alone of the operation, owing to the small space which existed between the anterior surface of the enlarged uterus and the brim of the pelvis. Having extended the wound, I passed my hand through it into the fully-dilated os, which was occupied by the head and bag of waters. I at once seized a foot and turned, and delivered a living male child without the least difficulty, the placenta being delivered simultaneously. The uterus contracted rapidly, and there was no uterine hæmorrhage. There was not over an ounce of blood lost in the operation, a couple of small arteries, which were divided in the incision, having been at once secured by torsion. In fact, few ordinary labors are completed with less loss of blood. The operation lasted a little over twenty minutes. The wound was washed with carbolic acid (5 per 100), and closed with gut sutures, and antiseptic dressings applied. The patient was then put to bed with hot bottles, etc. She was very much exhausted, and twice during the operation her heart became ominously feeble. On partially recovering, she became most violent, throwing herself about, shouting and using the most abusive language. Three persons could scarcely hold her down in bed. After half an hour she became calmer and more rational, and subsequently had some hot coffee and brandy (ether had

been previously injected subcutaneously), which seemed to do her good. From time to time she again grew violent, but speedily sank exhausted, though sensible. She seemed to be rallying, when, after about two hours, she unexpectedly sat up in bed, but in a few minutes grew livid, faint, and sank dying. Artificial respiration was tried in vain for ten minutes, and other measures but ineffectually, and she shortly expired.

Necropsy.—Next day I made an examination of the parts involved in the operation before the members of my class, going through the steps of the operation for their benefit on the right side of the body. A clot, about the size of a couple of walnuts, lay in the bottom of the wound. The bladder and peritoneum were quite uninjured, and all other parts except those intentionally incised. The uterus was well contracted, quite healthy, and the os and cervix free from laceration. There was no trace of cancerous disease in the upper part of the vagina.

Remarks.—That the fatal termination of this case was not a thing to be surprised at will be the opinion of most readers, as well as that Cæsarean section would not have been more successful. My opinion is that the unavoidable hæmorrhage, and the shock of cutting through the abdominal wall, laying bare the abdominal cavity, and dividing the uterine wall, would have caused the diseased and debilitated patient to die on the table. Had she been less violent, or strong enough to have justified one in giving morphia, or continuing the anæsthesia, her life might probably have been prolonged. That laparo-elytrotomy is a simple and feasible operation, I believe every reader will admit. It avoids almost all the capital dangers of Cæsarean section, and is not more difficult. The wound is much less extensive, the peritoneum and uterus are not wounded at all, nor the abdominal cavity exposed to danger from infective fluids, cold or mechanical injury; the danger of hæmorrhage is much less, the shock is less. and the delivery of the child is quite as easy. As compared with craniotomy, this operation is simplicity itself, and the results hitherto obtained much better, being absolutely good for the child instead of absolutely fatal, and for the mother most salutary results have also ensued. Had the cancerous growth in this case been less extensive, so as to

leave, say a passage of three inches in the vagina, and had craniotomy been tried, would any better results have been probable for the mother after the deliberate destruction of the child? I scarcely think so. Craniotomy, when practiced with perfectly healthy tissues, is most unsatisfactory in its results for the mother; and I can not but think that in such a case as this the unavoidable laceration of the diseased tissues which must have ensued, with consequent hæmorrhage, the tediousness of the operation, and the shock incident to it, must have led to a fatal termination in so enfeebled a patient. Even supposing the peritoneal cavity should be accidentally opened, the wound will be far less than in Cæsarean section, and the wound will be situated so as to favor, as far as possible, the escape of any blood, etc., from the abdominal cavity. Considering the easy nature of the operation, the certainty of saving the child, and the strong probability (judging from Dr. Thomas' report) of saving the mother, it is a question how far craniotomy will ever again be justifiable, and whether Cæsarean section should not drop into oblivion. I found my opinion more on the experience of Dr. Thomas and Dr. Skene than on my own single case. But the demonstration in this case of the truth and probability of what had been accomplished by the distinguished New York surgeons makes me think that the introduction (or revival) of this operation will exercise a great influence on operative midwifery in the future. The child is at present thriving.—*London Lancet.*

ART. II.—*Blood-letting.* By Prof. T. WHARTON JONES. [A Clinical Lecture delivered at University College Hospital on October 3, 1878.]

Gentlemen,—We have lately had under treatment cases of iritis and catarrho-rheumatic ophthalmia in which venesection was prescribed with great advantage; and, besides these, numerous other inflammations of the eye in which blood was taken by leeches and by scarification of the palpebral conjunc-

tiva. I therefore think that I may on this occasion advantageously occupy your attention with a few remarks on blood-letting.

At the present day medical practitioners seldom order abstraction of blood by venesection in cases of inflammation, and have even misgivings as to the propriety of applying leeches, the current doctrine being that it is not necessary for the cure, and that it involves a risk of impairing the strength needed to bear up against the disease. Formerly quite the contrary opinion prevailed, so that it would have been considered bad practice to abstain from the use of the lancet in any inflammatory complaint whatever. Blood-letting was, therefore, very commonly prescribed, but the extent to which it was sometimes pushed, especially by repetitions of the venesection, it must be admitted, was anything but reasonable, and, no doubt, reform was imperatively called for. Instead of simple reform of indiscriminate practice, however, complete reäction in the opposite direction has taken place, as is so common when extreme views on any subject come to be called in question. And now, as I before observed, doctors abstain from venesection, or even leeching, and that to the most moderate amount, in almost any case of inflammation, however severe.

Under these circumstances, in face of such a difference between past and present opinion, it may fairly be asked—and the question I consider one to which it is of the highest importance to obtain an answer, founded on the dictates of science and experience—under these circumstances, I say, it may fairly be asked whether by abstention from blood-letting altogether, as is the present fashion, inflammations of important organs are not often allowed to run a prolonged and disastrous course, which might be prevented by a timely abstraction of blood in such quantity that the loss of it could be in no wise injurious to the patient?

This question I will venture to answer as regards an important inflammation of the eye—namely, iritis. And first, I would observe that, in my experience, blood may be safely drawn, in any case in which we would think of letting blood at all, to the amount of ten to twenty ounces, while in many cases a repeti-

tion of the venesection to the same quantity need not be feared. You will have opportunities of observing in cases of iritis under my treatment here, that when bleeding has been had recourse to at the early stage of the disease, the pain around or over the orbit or in the temple ceases, or is soon greatly mitigated, the feeling of depression of the strength—for it is only a feeling, not real weakness—is relieved, the vascular congestion of the eye subsides, the pupil yields more completely to atropia, while mercury operating with more effect, less of it requires to be given. Convalescence is thus established within two or three weeks, sometimes even one week, with strength not only unimpaired, but actually improved. Apropos of this, let me relate a case. My friend, the late Mr. Graham, formerly Professor of Chemistry in this College, and latterly Master of the Mint, was seized with rheumatic iritis, for which I attended him in conjunction with the late Sir Robert Carswell, then also a professor in this College. Though Mr. Graham was not a strong man, I bled him, and, with the concurrence of Sir Robt. Carswell, repeated the venesection two or three days after; calomel with opium internally, and a belladonna application externally, were at the same time prescribed. Within a fortnight our patient was convalescent and back again to his lectures at the college, with strength not only unimpaired, but actually improved. Though once before this he suffered from an iritis, for which he was successfully treated by the late Dr. Mackenzie, of Glasgow, he never had another attack. But, mark you this, to show how much Mr. Graham appreciated the benefit he had derived from the blood-letting: Some years afterwards, finding himself rather out of health generally, he called on me one day and asked my opinion as to whether a blood-letting on this occasion was as likely to do him as much good as before. I was happy, however, to assure him that there was not now any necessity for the abstraction of blood; and, to set his mind completely at rest, I took him to the late Sir James Clark, who concurred in my opinion.

Without blood-letting, convalescence will not, in similar cases, take place in double the time, or even longer, and that only imperfectly; for, as a result of such a prolongation of the inflam-

matory action, serious organic damage to the eye is liable to accrue in the shape of synechia posterior, and implication perhaps of the ciliary body, choroid, and retina; whilst by the prolonged treatment the strength of the patient is pulled down, and a great tendency to relapse from slight causes remains.

In such a damaged condition of the eye, iridectomy often does good as a "no better do," but odd it is that the surgeon who would not hesitate to put the patient under the influence of chloroform or ether, and forthwith perform this operation, would perhaps shrink from ordering the more simple one of venesection—nay, even from the application of a few leeches—at the beginning of the iritis, by the beneficial operation of which the damaged state of the eye, requiring iridectomy, might have been prevented.

I have thus instanced the advantage of blood-letting in iritis, because we can so well observe its effects from day to day, and because I can speak from experience on the subject, elucidated by scientific observation as to the pathology of the inflammatory process generally. The *process*, mark me, for the state you have to contend with at the beginning of a pure, uncomplicated, acute inflammation, is very different from that which has supervened in the order of things at a later stage. First in the series of changes which take place in the inflammatory process, of which a part of the body accessible to observation is the seat, there is the visible rubor or redness, and the invisible nervous and muscular action which led to the vascular congestion on which the redness depends; while in the later stages there are the visible manifestations of the exudation of lymph, the tumor, or swelling, etc., which have supervened on the congestion by the invisible work of liquid diffusion and cell multiplication. Abstraction of blood in the beginning of an inflammation relieves the congestion, and thereby prevents or limits exudation. By abstraction of blood in the later stage, after exudation has taken place, congestion will even then be relieved, though less quickly, and in proportion as reëstablishment of the circulation in the inflamed part takes place, the exuded matters tend to be absorbed, and so the inflammatory process slowly comes to an end.

The doctrine that the inflammatory process consists merely in "proliferation" virtually ignores the vascular congestion and the symptoms depending on it, such as *rubor cum calore et dolore*. The doctrine thus refutes itself, by omitting cognizance of the condition on which depends the supply of material from the blood for the maintenance of the increased activity of cell multiplication constituting "proliferation." By disallowing vascular congestion as an all-important stage in the inflammatory process, the doctrine of proliferation supplies a plausible argument against the necessity of blood-letting, easily admitting, however, of being disproved by clinical observation and experience.

A peculiar incompressibility of the artery in feeling the pulse, hot skin, and white tongue are indications of the propriety of bleeding in general. They are so in iritis, in particular, and, I may add, catarrho-rheumatic ophthalmia also, in which the orbital or temporal pain and apparent depression of the strength are often much greater than in iritis, whilst danger to the integrity of the eye is as great, though in a different way—viz., by rapid ulceration of the cornea with all its disastrous consequences, such as prolapsus, iritis, etc.

Irrespective of the general indications I have mentioned, the local subjective and objective symptoms in each case of iritis or catarrho-rheumatic ophthalmia will, often of themselves, furnish sufficient indications for the abstraction of blood. Circum-orbital or temporal pain, for example, is a good indication, for when an acute ophthalmia in an ordinarily strong person is attended by that subjective symptom, venesection, followed by calomel and opium, quickly gives relief. And the same may be said of the ear-ache in acute inflammation of the membrana tympani. The absence of such pain, however, would be no counter-indication in the face of well-marked objective symptoms.

In severe inflammations of important organs the system tolerates the loss of blood in greater quantity than when there is no inflammation present, or when the organ inflamed is of less vital importance in the economy. In illustration of this fact the late Dr. Marshall Hall, in his work "On the Morbid and

Curative Effects of Loss of Blood," pointed out from his experience that if several patients affected with dissimilar complaints be bled, while sitting in the erect posture, it is found that one patient, perhaps, will faint on losing only a few ounces of blood, while another will stand the loss of ten times the quantity before syncope takes place.

The complaints in which the greatest quantity of blood may thus be drawn without the speedy induction of syncope are: Inflammatory congestion of the brain, inflammation of the serous membranes, such as pleuritis or peritonitis, and inflammation of the parenchymatous substance of organs, such as pneumonia, to which may be added, as before mentioned, iritis and catarrho-rheumatic ophthalmia. Now take notice that these are the very complaints in which abstraction of blood is of most benefit, and, therefore, most called for. Dr. Marshall Hall accordingly laid it down as an axiom, that in the operation of venesection the quantity of blood lost before fainting comes on, whilst the patient is in the erect posture, is *never more than is requisite for the cure of the inflammation, and never so great as to prove hurtful to the patient.*

In regard to the propriety of repeating venesection, the late Mr. Wardrop remarked that of a number of persons bled for inflammatory diseases, those who have lost the *largest quantities of blood by the fewest repetitions* of the operation have made the most rapid recoveries.

One moderate bleeding at first—say, to sixteen ounces—is usually sufficient for the speedy cure of an iritis of catarrho-rheumatic ophthalmia; but in some cases it may be necessary to repeat the venesection. The continuance of great pain in and around the eye, much vascular congestion, and the formation of a buffy coat on the blood previously let, will generally, taken in conjunction with other circumstances, indicate the propriety of a repetition of the venesection. If the first bleeding was well borne, a second may safely enough be had recourse to; but it is to be remembered that fainting comes on from the loss of smaller and smaller quantities of blood in the subsequent operations; showing that repetitions of the venesection are less and less necessary.

When it is not considered proper to repeat venesection, the application of leeches to the affected organ may still be necessary and prove advantageous. Leeches alone, applied near the corners of the eye, without any preceding venesection, you will often find sufficient for the speedy cure of moderate degrees of iritis and catarrho-rheumatic ophthalmia. It being always, of course, understood that the appropriate medicinal treatment is employed.

In acute inflammation of the membrana tympani attended by ear-ache in children, a leech or two behind the ear and a few doses of gray powder give speedy relief, and, by arresting the inflammation, prevent damage to the structure and function of the ear. In grown-up persons, if the pain in the ear be very great, venesection may be required, followed up with blue-pill or calomel, colchicum, and Dover's powder.

The inflammatory complaints not admitting of substantial benefit from the abstraction of blood, or in which the abstraction of blood is not called for, such as bronchitis, conjunctivitis, and other inflammations of mucous membranes, are those in which, if venesection be performed, the patient is liable to faint before much blood has flowed, it being understood that the patient was sitting in the erect posture during the operation. A patient, it is to be particularly remembered, ought never to be bled while in the recumbent position, as syncope less readily takes place, so that more blood might be drawn than is required or safe. Of course, if any tendency to syncope manifests itself when the patient sits up, that alone would be a counter-indication to the abstraction of any blood at all. When syncope does occur while the patient is sitting erect, he should be placed in the horizontal position, with his head low, and his feet raised, in order to favor the gravitation of blood to the brain.

Syncope, I may observe, is owing to diminished access of arterial blood to the brain, in consequence of the sudden constriction of the small arteries which takes place. The paleness and coldness of the surface of the body, and collapse of the face, indicate a similar impediment to the circulation in the skin. Relaxation of the muscular walls of the arteries, and

dilatation of their calibre (which soon succeed to the contracted and constricted state of those vessels) taking place, free access of blood to the brain and surface of the body is restored, with corresponding relief of the depression of the vital powers, which had been occasioned by the impeded circulation in the extreme vessels on the one hand, and the overloading of the heart and lungs by the consequent reflux of blood to those organs on the other.

Blood-letting by arteriotomy, or puncture of an artery, has been practiced, but it often happens that the requisite quantity of blood can not be drawn. The artery being opened with the lancet, contraction of its muscular walls is excited by the irritation of the incision, so that the calibre of the vessel becomes constricted, and the blood at first merely trickles out, instead of issuing in a stream or jet. After a time, however, the walls of the artery relax, and its calibre then becoming dilated, the blood jets out. Suppose a sufficient quantity of blood has been obtained, now comes the difficulty and trouble—namely, the arrestment of the bleeding. To effect this, it is necessary to apply pressure over the vessel on either side of the puncture, by means of graduated compresses and a tight bandage, so as to intercept the stream of blood in it, whether direct or retrograde. The artery which admits best of this pressure is the temporal artery, the subjacent bone offering the means of counter resistance. Notwithstanding the pressure which may thus be advantageously applied, however, hæmorrhage sometimes bursts out from the punctured artery, owing to the now relaxed state of its walls permitting, to the fullest extent, the impulse of the heart's action on the stream of blood. Under such circumstances the practice is to divide the artery completely across, in order that the end may retract within the sheath, and become closed, first by an external clot, to be followed by the formation of an internal clot, and the eventual obliteration of the artery at the place. Neglect of this precaution has sometimes permitted the formation of an aneurism.

Besides the disadvantages of arteriotomy which I have pointed out, opening an artery is not so simple an operation as venesection. To get at the temporal artery in order to puncture it

conveniently, it is necessary first to cut through not only the skin and subjacent cellular tissue, but also a thin fascia over the vessel. We thus see that arteriotomy, even if it had any advantage over phlebotomy, which it has not, is too troublesome an operation to merit being much recommended for the abstraction of blood. What led to the employment of arteriotomy in preference to phlebotomy, appears to have been the loose unmeaning hypothesis that inflammation is owing to an "increased action of the heart and arteries," and that, therefore, abstraction of blood from an artery would be going more directly to the root of the disease than abstraction of blood from a vein.

The excessive bleedings formerly in vogue appear to have been prescribed under the erroneous idea that it was by the mere diminution of the quantity of blood in the body that the cure of an inflammation was to be effected; and that, therefore, if the inflammation did not yield to one venesection, it ought to yield to a second, a third, or even a fourth—a "Sangrado" practice by which the patient was actually drained of his life's blood, instead of being cured of his inflammatory attack. But that this idea was not well-founded is shown by the fact that it is not in the full-blooded that the severest inflammations always occur. The truth is that the mode in which the abstraction of blood operates beneficially in subduing inflammation consists, when practiced in the early stage of the attack, as I before hinted, in the impression made on the vaso-motor system of nerves and in the changes produced in the composition of the blood whereby reëstablishment of the activity of the circulation in the congested part is promoted. The arteries, from being at first constricted, become dilated, and the blood is rendered thinner by the increased absorption into it of serous fluid from the interstices of the tissues which, in the dilated condition of the arteries, more freely takes place.

In many low states of the system very stubborn inflammations occur, and though, in most such cases, it would be improper to take away blood by venesection, leeches are, nevertheless, often of the greatest service. Though it is evident also that the powers of the system require to be raised by nutritious diet and strengthening medicines, it is bad practice to have recourse at

once to the indiscriminate and premature employment of this treatment. The nutritious diet, even if swallowed, fails to nourish, and the tonic medicines make matters worse. In a case of scrofulous ophthalmia, for example, it is a common thing to see port wine, quinine and iron, and the like forthwith prescribed, instead of first trying to check the inflammation in the only way in which that can be most easily and safely done, viz., by the application of a leech or two to relieve the congested vessels, and the exhibition of a few doses of gray powder to correct the morbid state of liver and stomach. When by such medication the inflammation with the intolerance of light is abating, then, but not sooner, tonics may be advantageously given, with liberty to the patient to eat as much as he has appetite for. Counter-irritation, if had recourse to at all, ought never to be ordered until this convalescent stage of the disease has set in. Blistering at first only tortures the patient, and does no good, if it does not aggravate the inflammatory symptoms.

Scarification of the palpebral conjunctiva we frequently practice in cases of purulent ophthalmia and chronic conjunctivitis. The vessels of the parts being in such cases much engorged, a few superficial scratches with the lancet are sufficient to give issue to a very considerable quantity of blood, and the propriety of the operation may be estimated by the freedom with which the blood is evacuated. After the bleeding has ceased we apply to the scarified surface the nitrate of silver in substance or solution, the red precipitate ointment or the like according to circumstances. It is, however, to be remembered that it is not the mere quantity of blood abstracted by scarification that does good. By first emptying the engorged blood vessels, the subsidence of the inflammatory congestion admits of being more effectually promoted by the action of the irritating applications which I have said we make to the conjunctiva for that purpose immediately after the scarification. Without previous scarification the irritating applications make little beneficial impression. Often they do ill. As to the modus operandi of irritating applications in curing conjunctivitis, you will find it explained in my Ophthalmic Medicine and Surgery.—*London Lancet.*

EPILEPSY.

BY JOSEPH A. WHITE, A. M., M. D., BALTIMORE, MD.

SUPPLEMENTARY.

[This is a portion of Dr. White's article on the Ophthalmoscope as a Diagnostic Means in Various Forms of Disease. It was received after the first portion had reached the Publishing House. As the paper is equally valuable published separately, it is inserted here.]—Ed.

I have examined twenty-five cases during the last year. In these the fundus oculi of eight was perfectly healthy; six had hyperæmia of the disks; five decided anæmia; two choked disks, both of whom were still in the stupor following the spasm; one true neuritis; one choroiditis, with shrunken vessels and atrophied spots; and two had one eye healthy and the other showing pallor of the disk. Here 33 per cent. were healthy, the others showing different changes in the optic disk; 20 per cent. anæmia, and 25 per cent. hyperæmia. The two who were examined immediately after the spasm showing slightly choked disks.

The number of cases is entirely too small to enable us to draw any conclusions of much value; but I would remark that, so far, my examination does not agree with what little I have read upon this subject.

Dr. Aldridge, of the West Riding Asylum, gives reports of five cases examined immediately after a spasm, and found very pale disks in all of them. The two I saw showed venous arrest and choking of the disk.

Dr. Clifford Albutt claims to be able to pick out epileptics from among a crowd of patients by the condition of the disk and retina; this condition being a marked hyperæmic state. I found hyperæmia in six cases out of twenty-five, and anæmia in five; two others showed anæmia of one disk and not of the other. Now, these results are so varying that it seems rather doubtful whether Dr. Albutt or any one else can distinguish an epileptic by the condition of the retina and disk. The cases showing anæmia or pallor of the disk may have recently recovered from an attack, the generally-received opinion being that

an epileptic spasm is due to cerebral anæmia, and it may be that when it is attributable to that cause the anæmic condition may continue some time after the spasm has passed off.

The causation of epilepsy is still, however, a subject of conjecture, and the ophthalmoscopic appearances would tend to show it was due to more than one cause, an opinion that is confirmed by the late experiments of Ferrier.

General Paralysis.—In this affection I have carefully examined twenty cases. The disease is a kind of cerebral sclerosis, which might be divided into three stages.

In the first stage we find congestion resulting in deposits of lymph and adhesions in and under the pia mater and cerebral structure of the anterior two-thirds of the brain.

In the second stage we still find congestion, and it is believed by many that the *arteries* of the cortical substance and pia mater are in a condition of tonic spasm, as it were. Atheroma of the arteries generally commences in this stage.

In the third stage we have degeneration and disorganization, softening, atrophy, atheroma, abscess, and hæmorrhage.

I have examined only twenty cases of general paresis, four of which were in the first stage, thirteen in the second, and three in the third. Three of the four in the first stage showed marked hyperæmia of the disk with cloudy margin. Of the thirteen in the second stage three had engorged disks, two simple hyperæmia, one with the right disk hyperæmic and the left very pale; two showed commencing atrophy, and five had healthy eyes. The three in the third stage had an atrophic condition of the optic nerve. Here I do not think there can be any doubt of the value of the ophthalmoscope as an aid in determining the condition of the patient. Nearly all the examinations gave results exactly in accordance with the condition of the brain as shown by frequent post-mortems; and in this respect my own investigations agree with nearly all others I have seen, except in some unimportant particulars. Some of the cases which I have reported as hyperæmic (so recorded at the time of the examination) should rather, I think, have been noted as "chronic neuritis," a condition which frequently precedes atrophy, and is analogous to the red and white softening of the brain.

The value of the ophthalmoscope as a means of diagnosis would at once declare itself in a case of general paresis with excitement, when there is some difficulty in distinguishing the trouble from "anæmia," by giving us the changes in the disk, which would, in the majority, help us materially in forming an opinion.

Mania.—We divide mania into acute and chronic. Of the acute form I have examined thirty-three cases. Ten of these or nearly 30 per cent. showed no change in the optic disk. In the other twenty-three cases active arterial congestion was discovered in eleven cases, engorged disk in six, neuro-retinitis in two, due probably to some basilar meningitis (chronic); two showed large swollen disks very white and shining with very large and full vessels (one of these was examined during a paroxysm of acute insanity, and the other just after such an attack); one a dirty gray disk with shrunken arteries, and one choroidal atrophy. Here, again, I may say the number examamined is too small to form any certain conclusions, but where the results agree so well, i. e., in nearly 70 per cent. of the cases, with the known condition of the brain, viz., a state of high arterial congestion, it appears to me that the ophthalmoscope is likely to prove very valuable as an aid to the diagnosis of forms of insanity.

In the *chronic form* of mania, where the condition of the brain differs from that of the acute form, in being in a state of chronic congestion with a liability to degeneration and softening, or formation of abscess, the ophthalmoscope seems also to be of some use.

I have examined one hundred and seven cases of this affection, and found forty-one of them perfectly healthy in both eyes, whilst three had pallor of the disks. The other sixty-three showed different stages of congested or inflamed disks, among them ten well-marked cases of choked or engorged disk, and three of neuritis. One man who was examined during a paroxysm of mania (a chronic maniac of ten years), instead of the staring, swollen white disks, which I observed in the paroxysm of acute mania, showed a very red disk covered with minute blood vessels. What the intra-cranial change was that pro-

duced "neuritis" in the three cases in which I found this appearance, I can not exactly say; but as they were cases of double neuritis, I should suspect some cerebritis or chronic basilar meningitis involving the optic nerve. The cases of "choked disk," due to venous arrest, were no doubt caused by some adventitious product forming within the brain, or by sub-arachnoid serous effusion; and I have no doubt that later on other symptoms will declare themselves to corroborate this view.

Melancholia.—In acute and chronic melancholia we find anæmia of the central lobes of both hemispheres, and the rest of the brain in a comparatively healthy condition, the difference between the acute and chronic forms being that, though both begin alike, in the latter (called chronic only because of its longer duration) the organic changes of degeneration and atrophy of the brain cells begin. I examined twenty-four acute and twenty-three chronic cases. Of the acute cases nine were healthy, two had pallor of both disks, one a pale disk in the left eye and passive hyperæmia in the right, seven had passive hyperæmia with very small arteries in both eyes, one, disks dotted with red dots, and four had inflamed disks, two of them tending rather to ischæmia of the disks.

Of the twenty-three chronic cases seven were healthy, eight had passive hyperæmia of disks and retina, two had disks dotted with red spots, two had passive hyperæmia of the right disk and the left one normal, two had inflamed disks, and one, a very interesting case, had passive hyperæmia in the right eye and choked disk in the left. This was a case of mental alienation with symptoms of melancholia from an injury to the frontal bone just anterior to the coronal suture on the left side. He had also aphasia and defective vision of the left eye.

I was not able to get the history of the patient clearly enough to give his condition immediately after the injury. I saw him first a year afterwards, and he was then recovering from his aphasia, although speech was still defective. In all probability an ophthalmoscopic examination just after the injury would have given negative results, and I think the change in the disks came on gradually, the "choking" of the left disk being due to a clot which produced this effect in its capacity as a foreign

body. I have noted one case among the acute and two among the chronic with disks dotted all over with minute blood-red spots. I do not know what condition of brain this indicates, and only refer to it again to say that I have noticed the same appearance quite frequently in cases of alcoholism.

In my investigations with the ophthalmoscope among the insane, I am thus far satisfied with the results, and they are sufficiently encouraging to lead me to expect much more from the instrument as an aid to the diagnosis of mental alienation. I have tabulated the results of my work up to this time, though the number of cases is as yet too small to be of any statistical value. I shall, however, add to them from time to time until the number is large enough to serve as valuable statistics for reference. Meanwhile, I should be very thankful to any of my professional colleagues who would put it in my way to examine cases of known or suspected intra-cranial or mental disease of any kind, and when possible to corroborate the observations made by seeing the post-mortem condition.

ABSTRACT DEPARTMENT.

"Qui e nuce nucleum esse vult, frangit nucem."

CONDUCTED BY EDWARD MILLER, M. D., LOUISVILLE, KY.

On Oleate of Zinc in the Treatment of Eczema. By H. Radcliffe Crocker, M. D.—The oleate of zinc promises to be a valuable addition to the lists of oleates, for which we are indebted to Mr. Marshall, more especially in the treatment of eczema. It is prepared by stirring together one part, by weight, of oxide of zinc with eight of oleic acid, as free from palmitic acid as possible, and, after standing for two hours, heating it until the zinc is completely dissolved. On cooling, it forms a yellowish-white hard mass, which can be made into an ointment by the addition of one part of cosmoline or olive oil, or two parts of lard, cosmoline being the best, as it does not become rancid. This ointment Dr. Crocker finds very effective in

acute and chronic eczema in the discharging stage. In the dry stage more stimulating remedies act more speedily. Dr. Crocker details several cases which he treated with this ointment. As an example, one of the patients had been treated in a hospital for twelve months without benefit, and on admission into the institution with which Dr. Crocker is connected, the face, neck, and scalp were found to be covered with pustular eczema. Thick yellowish crusts, with copious purulent discharges, were present in these situations, and the eyes were nearly closed by the swelling and discharge. Both the buttocks, thighs, and legs were also affected, and to a limited extent the trunk also. The discharge was free but not purulent in these parts. The hair was cut off, the parts soaked in olive oil all night to soften the crust, which was then bathed off with warm water. The oleate of zinc ointment, made with lard, was spread upon linen rags and kept closely applied by a bandage. The parts were kept constantly anointed with the ointment, new crusts were removed as fast as formed, and the old ointment wiped off before fresh was put on, and cod-liver oil given internally. Under this treatment the discharge soon ceased, the eczema disappeared, and the patient was discharged cured in about a month. Dr. Crocker has treated many other cases in the same manner with a similar result.

The oleate of zinc ointment is of the same class as Hebra's unguentum diachyli, and while beneficial in all forms of eczema, its most striking effects are seen in the discharging stage, although it never seems to do harm in any case, like more stimulating applications.—*Brit. Med. Jour.*

Reuniting a Severed Sciatic Nerve.—Mr. Wheelhouse, of Leeds, in his address to the Surgical Section of the British Medical Association, narrated the case of a man who had fallen upon a scythe and completely divided the sciatic nerve, the injury resulting in paralysis of the limb, which resisted all treatment. The ends of the nerve were made to reünite by exposing them by careful dissection and paring them obliquely until fresh nerve tissue was exposed. The ends were then brought together and stitched with fine carbolized catgut. The leg had to be

flexed upon the thigh in order to make up the shrinkage in nerve length, and the ankle was firmly lashed to the buttock to retain it in that position. Sensation gradually returned. At the end of five weeks the leg was gradually straightened, leting it down inch by inch, until it was in the proper position again. The power of voluntary motion was also gradual in its return, and at the end of three months the patient was able to walk with the assistance of two canes. The improvement was continuous, and finally he was able to work and move about as well as before the accident.—*Brit. Med. Jour.*

Opium Poisoning Relieved by the Application of Scalding Water. By WILLIAM SELDEN, M. D.—Since the hypodermic administration of morphine has gotten into general use, every now and then cases are reported of death from small doses cautiously given, with probably a large number of fatal cases left unmentioned. Dr. Selden has not seen death from this cause, but has met with two cases in which alarming and apparently fatal symptoms supervened. These two were saved from what seemed inevitable death by a remedy which he had often used in cases of profound torpor of the brain from other causes, viz., immersing the feet and legs in water scalding hot. In both of Dr. Selden's cases, in which the morphine was given for severe pain, the intensity of the symptoms for a long time resisted the influence of the morphia; yet as soon as the pain ceased, the alarming narcotism came on with such suddenness that in two or three minutes after falling asleep the patient seemed to be dead. The pain being of a neuralgic character, and not depending upon an inflammatory condition, as soon as the pain ceases there is no longer any resistance to or tolerance of opium, such as exists in those acute diseases where narcotism can not be produced by the largest doses. Dr. Selden thinks that scalding water acts by exciting intense and continuous pain, not only arousing the torpid brain to action, but creating a tolerance of the opium until the poisonous effect wears off. It is only necessary to use water hot enough to cause severe pain, and to stop short of vesication, though this is a trifling evil in comparison to the danger sought to be avoided. When

hot water is not at hand, what is to be done? As suggested by the Doctor's daughter, why not apply to the feet the flame of a lighted match or newspaper? It might seem harsh treatment, but in such a case the choice is between a burn and death. Dr. Selden has been in the habit, for thirty years, of plunging the feet into water scalding hot in cases of torpor of the brain or coma. The remedy is not new; Lallemand, in 1830, treated a case in this way successfully, but it has never been used before in cases of opium poisoning. Dr. Selden has used this treatment in narcotism since 1873, but he learned its great value in cases of cerebral torpor or congestion of the brain, as it was then called, from Dr. Conway D. Whittle, of Mecklenburg County, Va., thirty years ago.— *Va. Med. Monthly.*

A New Operation for the Cure of Detachment of the Retina. By J. R. WOLFE, M. D., F. R. C. S. E.—The effusion of serum between the retina and choroid in an otherwise healthy eye gives rise to the pathological condition called "detachment of the retina." This manifests itself first by dimness of vision, then by interruption of vision, i. e., he sees when he looks in one direction, but when he tries to look in another a cloud seems to intervene between him and the object. Examination with the ophthalmoscope shows in the first stage a slight undulation of the retina. When further examined, a regular gray elevation becomes visible, which screens a part of the fundus when the eye is in motion, and the retinal vessels are seen crossing its surface (partial detachment). This gray opaque body increases in size, and the sub-retinal fluid accumulates until no part of the fundus can be seen. There is then total loss of vision, and the detachment is complete. All medical treatment for this affection has proven worse than useless, and it is still classed among the incurable diseases. Von Graefe punctured the retina with a needle and allowed the fluid to burst into the vitreous humor. Mr. Bourman performed a similar operation, but it has not been repeated, and Mr. Carter, who saw Von Graefe perform it, says he can not recommend it otherwise than by saying "that it may possibly do some little good, and is not likely to do harm." Dr. Wolfe has endeavored

to rescue this affection from the list of incurable diseases, and has come to the conclusion that the safest and most satisfactory operation for removing the fluid is by cutting down upon the sclerotic and evacuating it. The patient being put under the influence of chloroform and a speculum introduced, an assistant fixes the eyeball with guttapercha-tipped forceps. A vertical slit is then made into the conjunctiva and subjacent tissue, laying bare the sclerotic below the equator of its anterior aspect. The lips of the wound are then separated by two small strabismus hooks, and the eye being kept steady, a Wecker's sclerotome, made of nickel-plated German silver and sharpened at the point only, is introduced into the sac formed by the fluid. The wound in the sclerotic is made obliquely, so that the edges of the incision will overlap each other when the knife is withdrawn. As the sclerotome is withdrawn, gentle pressure on the eyeball is made so as to evacuate all of the fluid. The lips of the external wound are then brought together with a fine silk suture, and both eyelids strapped with court plaster. The patient is kept quiet for six or eight days, and the bandages then removed. In the cases detailed by Dr. Wolfe, there was an immediate restoration of vision with progressive improvement.—*Lancet.*

CLINICAL RECORDS.

"Ex principiis, nascitur probabilitas: ex factis, vero veritas."

ART. I.—*Cases Showing Manometrical Movements of the Membrana Tympani.* By T. E. MURRELL, M. D., Little Rock, Ark. [Read before the College of Physicians and Surgeons.]

In a paper read before the State Medical Society of Arkansas last May, on "A Case of Deafness from a Singular Cause," and afterwards published in the "Richmond and Louisville Medical Journal," I alluded to a case that had come under my observation with a movable membrana tympani, from which I take the following: "A gentleman consulted me last year for partial deafness. During the examination I noticed the left membrana

tympani move inwards during inspiration and outwards during expiration. The excursions were quite considerable. No such peculiarity was observed in the right ear. I attributed it to two causes—undue patency of the Eustachian tube and unusual flaccidity of the drum membrane. This is the only case of the kind I have ever witnessed, and can find no record of a like one." In the same paper I called attention to Dr. Blake's report of a manometric cicatrix in the middle ear stretched across the opening of the Eustachian tube, on which he made careful observations, and reported them in the "Archives of Ophthalmology and Otology," Vol. V, No. 2. A short while after the former paper had gone to press, I had the fortune to meet with another case of movable membrana tympani, which I noted more carefully.

J. S., aged forty years, railroad laborer, consulted me for partial deafness of the right ear, caused by traumatism. He was very solicitous about this ear, because he had been very deaf in the other for ten years. With left ear watch not heard on contact; could hear very loud voice only a few inches. Membrana tympani was very thin and lax, and exhibited the umbo in an abnormal shape. The patient was suffering from malarial cachexia and was very feeble. While examining the left membrana tympani, he complained of turning blind, and at the same time I observed the membrane moving rhythmically inwards and outwards. Stopping the examination, I saw he was in the act of fainting. He soon recovered himself, when I resumed the examination. I now saw that it moved inwards during inspiration and outwards during expiration, the excursions being inconsiderable, yet very manifest. Presently the excursions increased very much, the membrane moving through a considerable range during respiratory acts. I was at a loss to account for the sudden increase of motion, when he remarked he was growing blind again. I had to stop the examination until he had recovered from a second syncopal attack. Owing to his feebleness I made only a short observation afterwards, and noticed the same amount of motion as between the attacks of syncope. I dismissed him for the time, and directed him to call again, but have not seen nor heard of him since. I intended

at the next visit, if this condition still existed, to make a thorough test of the effect of phonation and articulation on the manometric movements of the membrana tympani. The cause of deafness in the left ear seemed to be a chronic non-suppurative otitis media.

Whether or not the Eustachian tubes are ever permanently open in a normal condition, while the tubal muscles are in a state of rest, has not been satisfactorily shown. In the "Otological Review of the Archives," Vol. VII, No. 1, Hartmann, after numerous experiments, arrived at an idea of the amount of pressure necessary to inject air under varying conditions of the Eustachian tube. Although he speaks of "normally patent Eustachian tubes," "he denies that the tubes open during phonation, but concedes that the passage of air is more easily effected." He also speaks of a case in which "movements of the membrana tympani were visible during forcible respiration." Excepting this case, the case reported by Blake and the one mentioned by him of movable cicatrix of the membrana tympani, and the two cases where the non-cicatricial membrana tympani was movable, as observed by myself, constitute the only cases recorded, so far as I am aware of, and each of these occurred in pathological ears. I am, therefore, of opinion that a "normally patent Eustachian tube" is a wrong use of terms, and is no more applicable than normal as applied to emmetropia. There are two conditions necessary to produce this rare phenomena: First, a permanently open Eustachian tube; second, a flaccid membrana tympani, or thin cicatrix of the membrane which has lost its resistance. The condition of patency of the Eustachian tube is not infrequently met with, but the manometric membrana tympani is rare, and the two conditions together extremely rare. The free movements in the membrana tympani in the case just described during the syncopal state, must be attributed to relaxation of the tubal and tensor tympani muscles. The lesser movements, however, which were distinctly observed during an undisturbed state of the vaso-motor system, occurred during quiet and easy respiration, the patient resting in a chair.

ART. II.—*Infantile Cholera.* By WM. F. HARNER, M. D., Mitchell, Ind.

This disease usually manifests itself suddenly, and is announced by symptoms of which I shall now give you a rapid sketch. On looking at your little patient you are at once struck with a very sunken appearance of the eyes and with a bluish line encircling the lower eyelids; the child uttering incessant cries, often as if suffocated; the voice is altered, although it is true that the degree in which this alteration takes place is not great.

CASE.—I was called to see M. S. July 4, 1877, aged twenty months, attacked with vomiting, diarrhœa, rejection of all food and drink, languor and apathy, the abdomen greatly swollen. I was not present long when she was seized with a convulsion, lasting about twenty minutes. After the convulsion ceased I gave her an injection composed of the following—

℞. Potassii bromidi, grs. iv;
Tinct. opii, gtts. iv;
Tinct cinnamonii, gtts. iv;
Aquæ amyli, ℥ss.

M. and inject. Pulse at this time was 180, temperature 104½° F. After the injection she still vomited copiously, and I gave her the following—

℞. Sul. nit. bismuth, grs. iii;
Pepsin, grs. ii, in ice-water.

But she did not retain it, and was seized with another convulsion. I gave her a warm bath, applied ice-water to the head and mustard to the back of the neck. Gave her the bismuth and pepsin with the addition of thirty drops of nitre, and in ten minutes she was asleep. She slept for an hour, and when she awoke she began to vomit again. I gave her the injection again, as the bowels were acting freely, and in ten minutes repeated the powders and nitre, and ordered ice-water to be applied to the head until my return, which was in two hours. She had rested well; pulse 145; temperature 100°. Ordered the following—

℞. Potash bromide, grs xvi;
Tinct. ginger, gtts. xx;
Paregoric, gtts. xl;
Pepsin, grs. xv;
Aquæ, ℥i. M.

Sig. Teaspoonful every three hours until my return, which was eight hours. Pulse 120; temperature 95° F.; had rested well; vomiting checked; bowels also controlled. Ordered the medicine to be given every five or six hours. To control the diarrhœa and vomiting, ordered one-grain doses of quinine every four hours; also nourishment. Saw her again in thirty hours from the time she had the attack, and discharged the case, as she was up playing.

During the summer months of 1877, I treated several cases of infantile cholera, but made no notes of any cases but this one.

PROCEEDINGS OF SOCIETIES.

"Etsi non prosunt singula, juncta juvant."

Michigan State Board of Health.

The regular quarterly meeting of the Michigan State Board of Health was held in the office of the Secretary of State, at Lansing, Tuesday, October 8th, all the members being present, as follows: Dr. R. C. Kedzie, President, of Lansing; Dr. H. O. Hitchcock, of Kalamazoo; Dr. Henry F. Lyster, of Detroit; Hon. LeRoy Parker, of Flint; Rev. D. C. Jacokes, of Pontiac; and Henry B. Baker, Secretary, of Lansing.

Rev. D. C. Jacokes, Committee on Buildings, Heating, Ventilation, etc., mentioned experiments in progress with regard to a plan of ventilation applicable to houses already built, on which he should be able to report at the next meeting. He had given illustrated lectures in a town in this State, and secured the construction of a chimney with ventilating flue, as recommended by Dr. Kedzie in the first annual report of the Board, in a church where patent ventilating machines had failed; and the same plan would also be tried in private houses in that town. In this way he hoped to secure practical methods of ventilation "for the million." He had visited a house so constructed and shaded that scarcely a ray of direct sunlight could enter, and in which seven of eight children had died. He had

visited, by authority of the Board, several large ecclesiastical gatherings and spoken on subjects connected with the work of this Board, and through them had distributed important documents to all parts of the State.

Dr. Lyster, Committee on Climate, presented the introduction of a paper on the topography and climate of Michigan, illustrated with diagrams showing isothermal lines, rainfall, elevation of localities, distribution of woodland, frequency of storms, etc. It is to be completed for publication in the annual report.

Hon. LeRoy Parker, Committee on Legislation for Public Health, read a paper on coroners and coroners' juries, showing the former dignity of the office of coroner, and stating that the jury were originally summoned principally as witnesses. He traced the growth of the system of coroners' juries, showing the origin of some abuses and the extent to which the system has been degraded, and clearly exhibited the need for expert medical ability on the part of the coroner in tracing to their causes deaths from violence and accident, and for expert legal ability in dealing with cases of homicide, suicide, and murder. He recommended that the coroner's jury as now constituted be abolished, as has already been done in Massachusetts; and that efforts be made to secure as coroners men of expert medical and legal ability. He stated that the system now in force in Massachusetts was considered far superior to the old system.

Dr. Lyster spoke of some of the evils of the present system and the importance and need of the proposed reform.

Dr. Baker read a report of public health subjects in the proceedings of the Michigan State Medical Society at its meeting in Lansing in May last, which was ordered published in the annual report.

The Secretary reported further correspondence relative to the Sanitary Convention proposed to be held in Coldwater in February, 1879; also, correspondence with makers of sanitary appliances, relative to exhibiting their inventions at these conventions. He exhibited Wheeler's disinfector (invented by W. F. Wheeler 119 S. Fourth street, Philadelphia, Pa.,) for rendering the water supplied to urinals, water-closets, etc., itself a disinfectant, by means of carbolic soap; also Houghton's reversible

charcoal water-filter, designed to be attached to water-pipes at the point of delivery, which had been obtained for the same purpose from the agent, E. C. Houghton, 75 Devonshire street, Boston. The Secretary presented the usual report of work in the office during the last quarter. Circulars have been sent to the clerks of cities and villages who have not made the return of health officers as required by law; copies of the vital statistics of Michigan and of the last report of the State Board of Health have been distributed to sanitarians, sanitary exchanges of the Board, and others engaged in sanitary work in the State; 20,000 copies of the document on restriction and prevention of diphtheria have been printed and are being distributed; replies of correspondents relative to diseases of 1877 have been compiled for the annual report; other manuscripts have been prepared for the report of the Board for 1878, and the President's address and a few other articles have been printed. The annual inventory of property purchased, issued, used, and on hand, has been made. The meteorological registers supplied by the observers of the Board for the year 1877 have been compiled as a basis for an article on the "Principal Meteorological Conditions of the Year." The report concerning the property of the Board showed an addition to the library by gift, exchange, or purchase, of 258 volumes, mostly bound.

A motion was passed directing a complete set of meteorological observations to be taken in the office of the Secretary.

A motion was also passed directing that the document upon the restriction and prevention of diphtheria, recently issued by this Board, be electrotyped for use by the local Boards of Health and others interested in the restriction of the disease.

Dr. Lyster presented a communication from a dentist of Detroit relative to the preservation and care of the teeth, which was read and discussed.

The Secretary presented a communication from Dr. O. Marshall, of North Lansing, relative to opium eating and the opium habit, which included a summary of replies by ninety-six prominent physicians in Michigan to a circular of inquiry as to the number of opium and morphine-eaters of both sexes in their

localities. There were reported from these places, mostly villages and smaller cities, 1,313 habitual eaters of the drug. It also included a statement from the United States Treasury Department, showing that there have been imported during the twenty-seven years from 1850 to 1877, 5,299,774 pounds of opium, valued at $26,142,085, besides 22,565 ounces of morphine, valued at $73,433, imported during the seventeen years from 1861 to 1877; also showing that the imports for the ten years ending with 1877 exceed by 2,057,080 pounds, or nearly 200 per cent., the imports for the ten years ending with 1859. In addition, it is believed that there has been at least 10 per cent. of the amount above stated smuggled into the country. The estimates for Michigan, based on these replies and the statements of a wholesale drug-house in Detroit, show the consumption of opium to be very large.

The Secretary read a communication from Dr. Topping, of Dewitt, based on recent experiences in an epidemic of diphtheria, in which he reversed a former report that he had seen no evidences of the contagiousness of the disease, having lately traced about seventy cases to one first case.

Also two communications from Dr. J. S. Caulkins, of Thornville, relative to the period of incubation for diphtheria, based on a study of nine cases in one family, six of which were fatal, and eight cases in another family, four of which were fatal.

A resolution was adopted directing the Committee on Legislation to prepare a memorial to the Legislature in favor of a topographical survey of the whole State for sanitary purposes, to be instituted at once and carried forward to its earliest completion.

Dr. Baker was appointed a committee to confer with the representatives of the American Public Health Association, American Social Science Association, and others, relative to devising some method of uniform registration of births, marriages, and deaths throughout the United States.

After the auditing of bills and a large amount of routine business, the Board adjourned to meet January 7, 1879.

ORIGINAL CORRESPONDENCE.

"Sit mihi Fas scribere audita."

GREATWOOD, LANE'S PRAIRIE, MO., Dec 1, 1878.

Dr. E. S. Gaillard:

Dear Sir,—As one of the readers of your Journal, I presume to send you the interrupted minutes of a very interesting case that came under my care one year ago. Mrs. C., a married lady of delicate frame and constitution, aged twenty-four years, has been married six years, has had no children, was taken August, 1877, with acute rheumatism of the knee-joint, the joint being wonderfully swollen and painful. She was treated by a near physician until November, 1877, when she came into my hands. From all the symptoms and indications I diagnosed chronic rheumatism, and proceeded to treat the case with guyacum, colchicum, salicylic acid, and, it being a low district, with quinine as a tonic. She began very soon to improve, the swelling and tenderness getting better gradually until February, when she considered herself about well, and went where she pleased with the aid of a crutch, the ligaments being shortened from the inflammatory action in the knee-joint. She gained flesh and strength, and was unusually hearty.

On the 5th of April, after having passed the day in visiting, her knee began to swell and pain her, and in ten hours the limb, from the hip-joint down, was as large as the skin would permit. I was called, and pronounced it thrombosis in the pelvic and femoral veins. Writers assert that it may take place after chronic rheumatism. Patient retained a fair appetite; tongue clean; bowels regular; rested well, and but little irritative fever. I used tonics, alteratives, and local applications.

On May 1st the patient was no better; limb still swollen to its full capacity and growing more painful; leg œdematous; skin shining, and of a cool, doughy feel.

June.—More fever; less appetite; more pain; swelling much the same.

July.—Small nodules made their appearance in the inguinal region, two or three in number, very hard and of the size of a

grain of coffee, and much the shape of a grain of coffee or the half of a split bean. They grew to twice that size, when the top suppurated, discharging a thin white water or pus; but they soon grew more numerous, encircling the entire one-half of the pelvis from the crest of the ilium to the anus and labia majora, extending down the thigh at the same time, the first still discharging; the new ones beginning in about fifteen days to mature or suppurate.

August.—Patient no better; swelling still the same; more pain and of a burning character; nodules still extending; no longer any rest without opiates.

September.—Nodules still increasing, the first growing deeper and discharging more; new ones still coming more rapidly than at first, until now the entire one-half of the pelvis and the upper third of the thigh is covered with them. A continuous fever; no appetite; continual pain until the 30th, when death closed the scene.

Now, was this malignant from the first, or did it supervene from loss of strength, and what was it?

Yours truly, W. H. Bowles, M. D.

CHEMISTRY AND PHARMACY.

"Diruit, ædificat, mutat."—Hor.

CONDUCTED BY C. W. NULL, M. D., LOUISVILLE, KY.

Concerning the Administration of Quinine. (*The Doctor.*) According to Mr. Batterbury, one grain of quin. sulph. dissolved in an ounce of milk hardly renders it bitter; two or three grs. only slightly so. Five grains may be taken in a tumblerful without any unpleasant sensations.

Mr. Collier proposes the use of the kinate of quinia for hypodermic use, this salt being soluble in three or four parts of water. He prepares a basic kinate from the calcic kinate, and adds to it, in solution, the quinia sulphate in powder, procuring the amorphous kinate by evaporation. This is subsequently readily prepared for use. It possesses the two great attributes of solubility and neutrality.

M. Yvon recommends the lactate of quinia for use in the same manner, while the sulphovinate is also stated to be suitable for the same purpose.

With reference to the administration of the drug to nursing women, M. Burdel finds that the drug is absorbed more rapidly when given on an empty stomach, less so when given with the food; i. e., it appears in the mother's milk in larger or smaller proportion, according to the time it was ingested. So that when it becomes necessary to administer quinine soon after delivery, its injurious effects may be avoided by giving it with meals, or with some food, and by emptying the mother's breast with the pump three hours after the dose.

Infants at the breast never suffer from malaria, no matter how cachectic the mother, until after the fourth month; this immunity may last to the period of dentition.

Solubility of Chloral in Fatty Bodies.—M. Catillon, in a communication to the Société de Thérapeutique, observed that the ready solubility of chloral in considerable portions in fatty substances is not generally known, and may often prove of great utility in practice. One part of the hydrate is soluble in two of oil. The formula which he recommends is chloral 6 and oil of sweet almonds 30 parts; or, chloral 6, lard 27, wax 3 parts. On the same principle we may make plasters, bougies or suppositories according to the following formula: Chloral 1, white wax 2, and cacao butter $2\frac{1}{2}$ parts.—*Gazette Hebdom.*

Codeia in Cancer of the Pylorus. (*New Remedies.*)—Prof. Austin Flint recommends 0.06 of codeia most highly in cancers of the outlet of the stomach, saying that in such a case it completely stopped the emesis and pain, and the patient even thought the tumor was decreasing in size.

Heinsch's Sugar Test for Dangerous Organic Matter in Water.—Place a quantity of the water in a clean, glass-stoppered bottle; add a few grains of pure sugar, and expose to the light in a window of a warm room. If the water becomes turbid, even after exposure for a week, reject it; if it remains clear, it is safe.

Poisoning by the Cyanide of Potassium.—Dr. August Fisher, of Prague, believing that he had discovered in the hydrochlorate of ammonia the antidote for the poisonous effects of cyanide of potassium, recently submitted his discovery to the test of personal experiment. He expired in the most intense suffering a few minutes after taking the drug. He was the author of a work entitled: "The Way to Render Cyanide of Potassium Innoxious."—*The Medical Record.*

Ammonio-Sulphate of Copper in Epileptiform Facial Neuralgia.—Frère, of the Lariboisière, has found this, in doses of 0.07 twice a day, succeed well when other means had failed. In one case 0.10 was given at one dose.

Warts.—Dr. Craig, of Montreal, recommends a four-per cent. solution of chloral hydrate as a painless but effectual application to warts.

REVIEWS AND BIBLIOGRAPHICAL NOTICES.

"Judex damnatur cum nocens absolvitur."

The Principles and Practice of Surgery—A Treatise on Surgical Diseases and Injuries. By D. Hayes Agnew, M. D., LL. D., Professor of Surgery in the Medical Department of the University of Pennsylvania. In two volumes. Philadelphia: J. B. Lippincott & Co. 1878.

We are just in receipt of Volume I of this valuable work. The book is well worthy of the time and labor bestowed upon it by its learned author, being fully abreast with the most recent improvements and discoveries made in this important branch of medical learning. For twenty-five years the author has been engaged upon this work; not years of quiet meditation, of speculation, of advancing some theories and enlarging upon others, or, as he terms it, "moments of leisure," but during the hours of night; hours stolen from the time usually allotted to the repose of body and mind, and after the daily labors of an exacting public and private practice. The result is a work of great practical value to the busy practitioner, and

from its scope, from the author's learning and experience, enriched by much that is beautiful and valuable gleaned from the latest and most celebrated writings, it is capable of instructing and pleasing the most critical. The first volume contains 1,041 pages. It is most profusely and excellently illustrated with pathological specimens and surgical apparatus of the latest patterns and ingenious devices to aid the surgeon. We await with interest the second volume, when we will review in detail the contents of the work. It is useless to say the book is handsomely prepared and issued; the name of the publisher is sufficient guarantee.

Elements of Human Physiology. By L. HERMANN, Professor of Physiology at Zurich. Translated from the Sixth Edition by A. GAMGEE, M. D. London: Smith & Elder. 1878.

The translator of this work has made valuable additions to the original text, which greatly enhance its usefulness and enlarge its scope. These additions are incorporated in the text and indicated by brackets generally, though this is sometimes found impossible, and then the reader can not discriminate between the work of the translator and that of the author. A large number of illustrations in the section of nervous diseases have been added with excellent effect, and a few others of importance in other sections. The section on the nervous system occupies about one-third of the book, and is the best part of it. In this section, as in the others, Dr. Gamgee does good service by his additions to the original text. He introduces the use of the cardiograph; an account of the modes of ascertaining blood pressure of the sources of fat as deduced from the experiments of Messrs. Lawes and Gilbert and the physiological rheoscope.

There is certainly no question as to the great ability of both the author and translator, but the book is not destined to have a very general circulation in the profession, as the style is greatly condensed; a vast amount of knowledge is pre-supposed on the part of the reader, and only the advanced student will enjoy the curtness and compactness of the style.

The work contains 579 pages, and is, of course, presented to the profession in the good style which characterizes all of Smith & Elder's publications.

The Annual Message of the President of the United States. There is something of medical interest in this, as the President proposes draining the malarial areas in and about Washington for the better protection of its citizens from malarial diseases. He also proposes the formation of a National Sanitary Commission, that shall take measures to secure the country from importable and native epidemics. There is nothing further of medical interest in the message. It is gratifying and novel to see the President interested in medical matters.

A History of the Diagnosis, Pathology and Treatment of Yellow Fever. By J. B. Marvin, M. D., late Resident Physician to the Yellow Fever Hospital; Professor of Chemistry and Microscopy, Hospital Medical College; President of the Louisville Microscopical Society, etc. Louisville, Ky. 1878.

MISCELLANEOUS.

"Non omnes eadem mirantur ament que."

Transmission of Tuberculosis through the Air.—At the annual meeting of the society of German naturalists and physicians, Lippl ("Allgem. Med. Cent. Zeitung," 1878, xxxviii, 461,) gave the results of his experiments concerning the production of tuberculosis, assuming that the introduction of an infective material is the important factor. He endeavored to compel an inhalation of sputa from tuberculous patients, the minutest particles alone being used, that the irritating effect of large fragments might be avoided. Dogs were selected as the most suitable animals for experimentation, from the rarity with which they become tuberculous. This series of experiments proved negative. When the sputum was diluted with a weak solution of salt and water, however, and this mixture inhaled, a miliary tuberculosis resulted.

Tappeiner also produced an artificial tuberculosis by causing dogs to inhale a spray composed of phthisical sputa diluted

with water. Other dogs were fed with similar sputa, and were found to have acquired a miliary tuberculosis. He inferred that the human subject may also become tuberculous from the inhalation of particles from phthisical sputa suspended in air. The experiments seem to favor the view of the contagious nature of pulmonary phthisis, and to indicate that it is dangerous for phthisical patients to swallow their own sputa.

At the same meeting Schweninger called attention to the importance of these observations, if the nodules were to be regarded as actual tubercles. He had examined the specimens referred to in the above communications, and was of the opinion that they represented actual tubercles, and were entirely distinct from the appearances described by Friedländer and Wolff. The hereditary character and the contagion of tuberculosis thus received a ready explanation. For the inhalation of air expired from phthisical patients and the use of milk from tuberculous mothers furnished a more satisfactory means for transmitting the tuberculous poison than the view of predisposition or constitution.—*Bost. Med. and Surg. Jour.*

Singular Plan of Counter-Irritation for Stings.—The Southern darkey, to cure a toothache, will put a piece of red pepper in his eye. We had always taken literally his explanation, that he "soon done got enuff to do with dat eye, dat dar war'nt no time to think of de tooth." But according to Dr. Lucas, of the Bombay army, the proceeding is rational, after all. This writer describes a treatment for scorpion stings. He says: "The sting is at first like a sharp prick from the point of a needle or a finely-pointed nail, and in a very few seconds it assumes a very agonizing form, as if innumerable pins and needles were thrust into the part. It then shoots up the limbs, along the course of the main nerve trunk, and is afterwards of a darting and most excruciating nature, reaching its climax in from three to five minutes. When a pinch of powdered alum is put into the eye (the eye of the affected side being preferable), the pain of reflected irritation ceases almost instantly, as the conjunctival mucous membrane begins to smart; the local pain, perhaps less severe than before, gradually subsides after some hours, and its

disappearance is, I am inclined to think, expedited by firm and steady pressure. In regard to the modus operandi of the alum cure, I will refrain from saying anything beyond that it probably acts by distracting pain and irritation elsewhere."—*Med. and Surg. Rep.*

Acetic Acid Injections in Carcinoma.—Acetic acid, used subcutaneously in cancer, is by no means a novelty, but does not deserve to be forgotten. It has been revived of late by Dr. T. Gies, who states, in the "Zeitschrift für Chirurgie," that he effected marked improvement in a case of cancer seated on the ramus of the lower jaw, which had returned after operation and had attained the size of a fowl's egg, by the injection of acetic acid in the proportion of one part of the acid to three of water. The tumor speedily underwent reduction of size, and was ultimately no larger than a hazel-nut. The same patient had a second tumor of the size of an egg beneath the ear, which almost entirely disappeared in the course of twenty-one days, after twenty-five injections of strong acetic acid. In a woman, again, who had a carcinoma of the size of a pigeon's egg in the left mammary gland, ten injections effected its removal in great part in the course of a month, reducing it to the size of a hazel-nut.

Case of Radial Paralysis Cured by Operation.—At a meeting of the Niederrheinische Gesellschaft für Natur und Heilkunde in Bonn, Professor Von Mosengeil showed a patient on whom he had operated successfully for paralysis of the radial nerve. The patient had suffered from gangrenous phlegmon of the upper arm, in consequence of which a portion of the soft parts covering the bone on the posterior and outer side had sloughed to the extent of a hand-breadth. The cicatricial tissue formed in healing had compressed and paralyzed the nerve. In the operation the nerve was exposed at the border of the supinator longus, and followed upwards for six or seven inches, and a portion, an inch long, firmly imbedded in cicatricial tissue, was set free. Healing took place by first intention. The paralysis lasted several months, but had disappeared some weeks before the patient was shown.—*Berliner Klin. Woch.*

Cholagogues.—The "Lancet" says, at a meeting of the Edinburgh Medico-Chirurgical Society, June 19th, Professor Rutherford detailed some experiments on the biliary secretion and the action of cholagogues. The subjects of experiment (dogs) were curarized, and the drugs injected into the duodenum. Physostigma is a powerful stimulant of the secretory action, its effect being neutralized by atropia, the latter by itself having no influence. Phytolacein, nitric acid, sodic benzoate, ammonic benzoate, ammonic phosphate, and sodic salicylate, act like the calabar bean, simply on the liver. Menispermin and veratrium act only on the intestinal glands. Gamboge stimulates the whole intestinal tract. Baptisin stimulates both liver and the intestinal glandular system. Tannin and potassic iodide have no effect, and plumbic acetate checks the hepatic secretion. The true cholagogues, as mentioned above, act by stimulating the hepatic cells or their nerves. A purgative agent which only stimulates the intestinal tract diminishes the secretion of bile by draining the portal vein.

Opium Smoking.—Some remarks on this subject are recorded by Dr. Ayres, colonial surgeon at Hong Kong, says the "London Lancet," in his last report to the Department. According to the opinion and experience of this officer, it is a misapprehension to attribute to the smoking of opium, as a rule, the fearful and ghastly results with which it is usually credited. When offenders are committed to jail their allowance of opium is frequently stopped altogether, but no evil results ensue. It would appear that opium eating has been confused with opium smoking, and that many who practice the latter are the subjects of scrofulous diseases in their worst forms and most advanced stages.

Urea Formation.—Professor Gamgee, of Owen's College, Manchester, has recently published an account of some new experiments to determine the seat of the urea formation in the body. The result is, the experiments have demonstrated that the liver is the principal if not the only organ of the body concerned in urea formation.

Nitrate of Silver as a Uterine Caustic, is thus spoken of by Dr. T. Addis Emmet: "We have no remedy which acts with more promptness than the nitrate of silver, when applied to the mucous membrane of the cervix, yet it has done more damage than any other. From being in common use, it is the more dangerous; for its repeated action will ultimately destroy the mucous follicles, harden the tissues, and close the os, as certainly as the application of the actual cautery."

Permeability of the Entire Alimentary Canal by Injections. Dr. Robert Battey, of Rome, Ga., ("Va. Med. Monthly") finds that rectal injections can, under ordinary circumstances, and by the use of no very great amount of pressure, be made to pass through the entire alimentary canal. He has accomplished this in several patients, and has also demonstrated it upon the cadaver, notwithstanding the common idea of teachers and text-books, that the ileo-cæcal valve will not permit matters to pass backwards. The value of such injections in cases of hernia, intussusception, etc., can be easily understood.

Examination of Seminal Stains Found on the Wooden Floor of a Room.—Dr. Gallard, in an article in the "Gazette des Hopitaux," arrives at the following conclusions: 1. The examination of these stains may give as authentic results as that of stains on linen or clothes. 2. If the semen form a sort of slightly adherent varnish on the floor, the flakes of which are easily separated, the examination is less difficult than when it has to do with linen or cloth, as it is only needful to dissolve the dried semen in a little distilled water. But if the semen has soaked into the wood, a little water must be placed in contact with the stain for a time, and the wood must be scraped with a scalpel.

The Body-Temperature in Granulating Suppurative Inflammation of Joints.—Dr. König ("Deutsche Zeitschrift für Chirurgie") remarks that the prognostic importance of commencing suppuration in fungous arthritis is clear, from the fact that abscesses in joints are almost never absorbed in adults, in children only seldom; and therefore that the prognosis of such

suppurations, when left to themselves, is unfavorable. Dr. König has ascertained that the commencement of suppuration is indicated by the course of the temperature of the body. Uncomplicated granulating synovitis is not, as a rule, of itself attended with any abnormal course of temperature. Individuals suffering from such affections are indeed very irritable, and slight causes (such as the application of dressings, removal, etc.,) readily produce a rise of temperature; this, however, is only of short duration. Prolonged rises of temperature indicate that suppuration is commencing in the joint which is the seat of fungous disease, where they are not caused by processes going on somewhere else independently of the affection of the joint. There is often only a slight rise of the evening temperature, while the morning remission is considerable; in anæmic patients especially, the morning temperature falls even below the normal. Sometimes the development of abscesses is not accompanied with fever, and frequently the patient is free from fever during the formation of a cold abscess; probably because the firm membrane enclosing the abscess resists the absorption of fever-producing materials.

MEDICAL NEWS.

'Nulla dies sine linea."

Langenbeck has successfully extirpated the left kidney of a woman aged thirty-two.——Chlorhydrate of pilocarpine, the active principle of the powerful diaphoretic, jaborandi, is quoted at wholesale at forty cents a grain, and is obtainable in Buffalo. ——At the last session of the Medical Examining Board of the U. S. Marine Hospital Service at Washington, in August, thirteen out of thirty-one applicants appeared, and of these, three were accepted and appointed assistant surgeons.——*Ague—Amyl Nitrite.*—The inhalation ("Lancet") of the vapor of this remedy in ague at the commencement of the cold stage is said to cause a glow over the whole body, and the shivering fit comes to an abrupt termination.——*Phosphide of Zinc in Hysteria.*—Dr. E. Gross speaks of a case of long-continued hysteria ("New

Remedies") cured in five days by phosphide of zinc, from one to two-fifteenths of a grain in granules having been given with food thrice daily.——Wachsmuth, of Berlin, asserts ("N. Y. Med. Rec.") that much of the danger from the administration of chloroform may be averted by adding to it twenty per cent. of oil of turpentine, which, he says, stimulates the lungs, and thus protects them against the great enemy of chloroform narcosis—pulmonary paralysis.——A common formula for preparing Hamburg Tea, according to a correspondent of "New Remedies," is: Senna leaves, eight parts; manna, four parts; coriander, one part. Mix.——The suit against the "Medical Record" for libel, instituted by Dr. W. A. Hammond four years ago, and based upon the criticisms of his article in the "New York Tribune," on Hydrophobia, has been recently withdrawn by that gentleman.——*Coma and Alcohol.*—Dr. Macewen, of the Glasgow Infirmary School of Medicine ("Med. Record"), lays down the rule that an insensible person, who, being left undisturbed for from ten to thirty minutes, has contracted pupils which dilate on his being shaken, without any return of consciousness, and then contract again, can be laboring under no other state than alcoholic coma.——*Trichinæ in Fish.*—A sensational story is started in England to the effect that certain pike ("Med. Record"), taken near Ostend, were found to be full of trichinæ. It is quite probable that these parasites are nothing more than the intestinal worms which infested the Hudson River shad last spring.——Expulsion of the placenta is said, by Spiegelberg ("Toledo Med. and Surg. Jour."), to be facilitated by the habit of applying the second ligature to the cord, which keeps the placenta full of blood.——*Action of Quinia on Healthy Subjects.*—From experiments made ("Amer. Jour. Med. Sciences"), the details of which are given, it is found that in health there is a slight diminution in the number of red corpuscles, and a marked increase in the number of the white after the administration of a large dose of quiniæ sulphas.——It is stated in the "British Medical Journal" that Mr. Callender, F. R. S., the surgeon of St. Bartholomew's Hospital, will visit America this month (December) to examine the surgical institutions and practice of the United States.——Dr. H. J. Bige-

low, of Boston, is on a visit to England, and is explaining the use of his new instruments for rapid lithotrity. He is very justly the recipient of marked attention by the leading surgeons in London.——Dr. Fordyce Barker has resigned his position as one of the Surgeon's of the Woman's Hospital of New York. ——A correspondent of the "Chicago Med. Jour." states that all the patients Dr. J. Marion Sims operated on while in Vienna died within ten days of peritonitis.——Dr. William S. Edgar, late editor of the "St. Louis Medical Journal," died recently. ——John Hilton, F. R. C. S., F. R. S., the well-known London surgeon, died October 14th, aged seventy-four. Lectures on various surgical subjects and papers in the medical journals have for many years rendered his work familiar to the profession.——Dr. Gross, in his last edition of Surgery ("Pacific Med. and Surg. Jour.") says the oldest case of hip dislocation on record happened at eighty-six years. Dr. Kennedy reports to the "Cincinnati Lancet" the case of a Mrs. Jenks, who dislocated the hip at the age of ninety-one years and five months. It was shortened upwards of three inches. She died from the injury.——The report on hydrophobia, by the British Medical Association, refers to 1,743 cases, mostly furnished by the U. S. Surgeon-General's office. —— Prof. Alonzo Clark says: "As a matter of fact, two-thirds of the patients sick with typhoid fever do better without than with alcoholic stimulation."——In a discussion on cremation at a London club, a member is credited with the argument: "We earn our living, why should we not urn our dead?——A laboratory has been attached to the Prefecture of Police, at Paris, for the purpose of testing wine, brandy, beer, etc., offered for sale.——The last miracle heard from was down in North Carolina. There is a miraculous well there, and a negro bathing in it was turned white. The "Cincinnati Enquirer" is our authority (at second hand). We think it must have been a "cracker," who had never washed in his life before, and was amazed to discover the natural color of his skin.—*Medical and Surg. Rep.*——An Italian medical society which meets at Pisa recently sent a request to the various Italian papers to cease reporting suicides, stating that after careful study of the subject they had reached the conclusion that

such publicity tends, at least in Italy, materially to increase the number of those who destroy themselves. The motive is sometimes imitation, sometimes a morbid thirst for notoriety.—— Dr. Neale reports ("Lancet") the case of a boy ten years old in whom pertussis, mumps, and varicella all ran their course at the same time.

EDITORIAL.

"Nullius addictus jurare in verba magistri."—Hor.

Close of Volume XXVI.—This number concludes the volumes for the present year, and the editors are constrained to express their regret that the patience of the subscribers should have been so much tried by the delay in the issues of the last few months. They can promise, however, that such irregularity will not occur again, as the recent addition to the editorial staff will hereafter insure to the subscribers both regularity and punctuality.

The present year has been a most trying one to this Journal; for during the months of August and September many of the subscribers laid down their lives for the unfortunate fever-stricken communities of the South. At one time each mail brought to this office tidings of the loss of another subscriber, and while sorrow and regret for the loss of these noble men was of course the chief feeling aroused by this fearful mortality, there is no disguising the fact that this Journal has suffered in its business by the yellow fever. This fact is frankly stated to the subscribers, and the suggestion is made to them that this is the time, of all others, when their usual good offices are most necessary. That they will be true to the work which they have supported for years the editors do not doubt; but they ask them to make special efforts during the next few weeks to interest their medical friends in this Journal, and to help in placing it upon a surer foundation than ever before. They desire for each of the subscribers a like prosperity, and bring this short editorial to a close by wishing them all a merry Christmas and a happy New Year.

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